Bear and Human

The Archaeology of Northern Europe
Volume 3

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Advanced Studies on the Archaeology and History of Hunting, edited by the Centre for Baltic and Scandinavian Archaeology (ZBSA), Volume 3

Bear and Human

Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe

Edited by Oliver Grimm,
in cooperation with Daniel Groß, Alexandra Pesch, Olof Sundqvist, and Andreas Zedrosser

A volume based on papers presented at a conference at Orsa Predator Park, Dalarna, Sweden, Oct. 16th to 18th, 2019

Volume 3.1

BREPOLS

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library.

Copy editor: Gundula Lidke

Layout, typesetting, and image editing: Matthias Bolte and Cornelia Lux-Kannenberg. Cover design by TopicA.

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D/2023/0095/164
ISBN: 978-2-503-60611-8 (3 vols)
e-ISBN: 978-2-503-60613-2 (3 vols)
Volume DOI: 10.1484.M.TANE-EB.5.134319
Three-volume set : DOI: 10.1484/M.TANE-EB.5.133678

Printed in the EU on acid-free paper.

Conference sponsors

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Foreword by Oliver Grimm

The present book is the outcome of discussions that took place during the formation period of the Centre for Baltic and Scandinavian Archaeology (ZBSA, Schleswig, Germany) between late 2008 and 2010. Together with my dear colleague, Alexandra Pesch, who is co-editor of this book, the idea was coined to set in motion a workshop cycle, whose aim is the interdisciplinary analysis of high-profile 1st-millennium-AD topics that are in need of modern study and synthesis. Up to the present day, eight workshops have resulted in extended proceedings (the present book included), and more are in preparation.

The meetings themselves are characterised by lectures of restricted length (20 minutes), followed by questions and answers (10 minutes). Further, the speakers are expected to send abstracts before the actual event in order to allow orientation against the background of talks from different scientific fields. Due to the structure of the meeting, with its emphasis on discussions, we prefer to use the term "workshop".

In the meantime, two subcycles have seen the light of day. The first one addresses image analysis and is in the hands of Alexandra, in cooperation with others, whereas the second is about the archaeology and history of hunting, but in fact it moves more and more towards Human-Animal Studies in a broader understanding and for periods of time that are substantially longer than the 1st millennium AD.

The idea to look upon hunting (Human-Animal Studies) also goes back to the formation period of the ZBSA and reflects communication between another dear ZBSA colleague of mine, the archaeozoologist Ulrich Schmölcke, and me, an archaeologist with a focus on the 1st millennium AD in northern Europe.

The pilot workshop (2011) and its extended proceedings (2013) on "Hunting in northern Europe until 1500 AD" were handled by Ulrich and me, whereas the following workshops and large-scale publications – two of them, globally, on raptor and human (with a focus on falconry, books printed in 2018 and 2020), and now a third one on bear and human for northern Europe – were mostly in my hands. I was very glad, however, to have considerable back-up from others, namely, the learned falconer Karl-Heinz Gersmann for the raptor volumes and, in the present book, four scholars: Daniel Groß (once ZBSA, now Museum Lolland-Falster in Denmark) for Stone Age archaeology, Alexandra Pesch (ZBSA) for 1st-millennium-AD archaeology, Olof Sundqvist (Stockholm University, Sweden) for the history of religion and, not least, Andreas Zedrosser (University of South-Eastern Norway) for biology. Thus, we see here five parties from four different countries and with three different academic backgrounds who were responsible for the book.

The consideration of hunting (Human-Animal Studies) is meant to fill a gap in research: While the period of hunters and gatherers also finds much attention in the ZBSA, and rightly so, hunting in the era of sedentary life-style, from the Neolithic onwards, seems to get much less coverage, which is a mistake. For example, in Norway and Sweden we see a burial rite in the middle of the 1st millennium AD that included the deposition of bear remains, mostly claws but sometimes skin or teeth, in hundreds of graves. There was no such burial rite earlier or afterwards, or at least not to that extent, with the remains of bear or other wild animals.

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This observation has been the starting point for launching research into the subject of "bear and human", which is also a topic that cannot be grasped without the inclusion of scholars from different fields in the Natural Sciences and the Humanities. The present book will address another gap, too; it is our feeling that Human-Animal Studies in their endeavour to describe human and animal relationships in alternative ways, detached from a purely utilitarian view, still yield unused potential for archaeology. Here, this approach is projected back in time, and it will also look at hunting, which may not be that common in Human-Animal Studies. Furthermore, the issue of Eurocentrism is faced, and the answer is one contribution that sheds light on the so-called Mound Builders of ancient America (1000 BC to AD 1600), in the present-day eastern United States of America, and their relations with bears.

I am very indebted to my co-editors for all their help: Alexandra Pesch for image analysis and Iron Age archaeology more broadly, and Andreas Zedrosser for coordinating all the worthy contributions on bear biology and for instructive talks. The conference was planned with Olof Sundqvist from Stockholm University, who also wrote successful letters of application to raise a conference budget. The workshop and book bear his mark, too. In turn, it was Daniel Groß, a former ZBSA colleague of mine, who drew attention to Orsa Predator Park and its impressive conference facilities in inner Sweden.

It turned out to be a brillant choice and, at the same time, a most harmonic conference ("conference yoga") – an event to be remembered. We talked about bears at the conference location while bears actually moved around it. We were lucky twice. The conference in autumn 2019 took place in the late pre-virus period, and Orsa Predator Park has since been closed down.

The authors have been patient with us in the long period of book production. Thank you for this and for making such colourful manuscripts available. The present book is the result of an international and interdisciplinary cooperation, as can be seen in the book structure itself with authors from nine countries and different academic fields: archaeo(zoo)logy, art history (image science), biology, history of ideas, history of religion, literary studies, philology.

The present publication has gone through a peer-review process. The delivered manuscripts were read by at least one of the book (co-)editors and by one internal (from among the book authors) or external expert. Authors were asked to deliver a final manuscript that takes into account suggested amendments. The ongoing contact with authors proved to be very insightful; this includes John Ljungkvist and Elisabeth Iregren, to mention only two of them.

Translators (David Barick, Irina Bittner, Larissa Birrer, Wilson Huntley, Julian Jain, Sabine Lutkat, Dirk Steinforth), a language proof-reader (Sharon Shellock) and illustrators (Cornelia Golze, Anna Carina Lange, and Lars Foged Thomsen) made significant contributions to the book. This is very much appreciated.

Gratitude reaches its maximum when it comes to Gundula Lidke, the copy editor, and also the graphic designers Matthias Bolte and Cornelia Lux-Kannenberg (the former attached to the ZBSA, the latter two to the State Museum Foundation Schleswig-Holstein, Schleswig). Their work turned texts into articles and, finally, resulted in this fine book. Perfect working conditions were in place after years of collaboration on other publications, and the work proceeded in a way that was concentrated, but which also included many smiles: "book yoga".

Book production often has a sad side, too. While preparing the present one, the very gifted graphic designer and very nice fellow, Lars Foged Thomsen (Denmark), passed away suddenly. He was deeply involved in the creation of both falconry books from the ZBSA (2018, 2020), which were truly enriched and adorned by his work. This, however, was not only about work, it also included many good laughs and talks. Cooperation with Lars goes as far back as the late 1990s. Lars, you will be missed.

The book you hold in your hand has been made possible only by the benevolence of the leading persons at the ZBSA (then director Claus von Carnap-Bornheim, head of research Berit Eriksen, and

head of administration Doris Rohwäder), and there was also help with the practical, economic side from Babett Winkelmann and Jutta Carstensen.

Finally, we are very glad about the contact with publishing manager Rosie Bonté from Brepols Publishers, and this includes Paul Johnson and Sam Turner, the editors of the book series "The Archaeology of Northern Europe" under the umbrella of the mentioned publishing house. Thank you very much for accepting the present book for print; this is a much-welcome opportunity to address an international audience.

Prologue: A little story as an attunement. As legend has it, there was once a grim landowner on northern Gotland. He could not find peace in the afterlife and became a revenant. No incantation could bind him. Finally, his grave was opened and he was re-buried at some distance, with a bear skin placed on top of him that was intended to make him rest. And so it did. The legend was attached to one burial mound in a local cemetery with altogether 150 graves. When that mound was excavated in the 1920s, a weapon burial was found, including a sword, that dates back to the 1st or 2nd century AD. However, bear claws also came to light, one group close to the head and another at the feet of the interred man, which may actually suggest that a bear skin was once placed in the burial (!) (see H. Hansson, *Fornvännen* 1923, 225–229; grave nr. 18, Backhagen cemetery, SHM 16492; personal communication J. Ljungkvist).

Enjoy the book!

Schleswig, March 2023

Oliver Grimm (with best regards from the co-editors Daniel Groß, Alexandra Pesch, Olof Sundqvist and Andreas Zedrosser)

Bear and human: Facets of a multi-layered relationship – introduction, discussion and synthesis



It was believed, from antiquity onwards, that bears were born as shapeless lumps which had to be licked by their mother into the proper shape. In a Christian understanding, this licking was a symbol of how Christ converted the gentiles (see Van Os and other texts, this volume; image after the Bestiary of the University of Aberdeen, United Kingdom. End of the 12th century. Manuscript 24, folio 15r. Creative Commons Attribution 4.0 International Licence [CC BY 4.0]).

"Bear and human" – introduction, discussion and synthesis

By Oliver Grimm

Introduction

The Centre for Baltic and Scandinavian Archaeology (ZBSA, *Zentrum für Baltische und Skandinavische Archäologie*) in Schleswig, northern Germany, has a history of instigating research into the archaeology and history of hunting or – more broadly understood – Human-Animal Studies (more on this below). This research focus goes back to the formation period of the ZBSA in the years 2008 to 2010. Right from the beginning, there was an awareness that a modern synthesis on premodern hunting, either at a country level or beyond, is missing for the areas of concern covered by the Centre. Here, the voluminous treatments of the topic by the well-known German hunting historian, K. Lindner (1937; 1940), stand alone and there has been no effort to update his research. This does not come as any surprise, however, since the relevant source materials are so extensive and originate from such a diversity of academic fields (especially in the case of more recent times) that they are beyond the capacity of one scholar. In contrast, the only way to approach the topic is by means of case studies, upon which overall syntheses can be increasingly elaborated.

Raptor and human, bear and human, beast and human – research at the Centre for Baltic and Scandinavian Archaeology

Apart from articles and monographs from scholars of the Centre for Baltic and Scandinavian Archaeology (ZBSA) that focus on chosen aspects of hunting and gathering for parts of the Stone Age, conferences with extended proceedings are the main vehicle for gathering knowledge for the period from the Stone Age to medieval or even younger times. In the present context, the intention is to include scholars from all relevant fields in the Natural Sciences and Humanities. This approach was implemented in a pilot conference in 2011, followed by conference proceedings on "Hunting in northern Europe until 1500 AD" (Grimm/Schmölcke 2013). This particular book covered many different aspects of the topic and formed the basis for further research.

From then onwards, work has focused upon particular animal-and-human relationships. It started with conferences and extended conference proceedings on "raptor and human" (Gersmann/Grimm 2018) and "raptor on the fist" – the latter of which also contributes to image analysis (Grimm 2020). The given topic, with a focus on the archaeology and history of falconry, was considered from a global perspective. In the present case, the multi-layered bear-and-human relationhip, analysis is restricted to northern Europe (see below). Apart from that, in a session at the annual meeting of the European Association of Archaeologists (EAA) in 2021 (Kiel), the topic of "beast and human" was studied, based on archaeology and with a look at different animals. Now being prepared for publication (Grimm in prep.), this subject can be understood as a first but small step to introduce studies that go

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 19–46 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134323

beyond the focus on one animal species, but this is not yet an expression of a multi-species approach (see for archaeology Overton/Hamilakis 2013, 159–163; Harris/Cipolla 2017, 152–169; Pilaar Birch 2018).

Book: Scope and limitation

The present book stands in the tradition of ZBSA workshops and extended proceedings, which follow a certain scheme that was established in the aforementioned pilot conference (2011) and book (Grimm/Schmölcke 2013; see also more broadly the foreword by O. Grimm, this volume, for the interdisciplinary workshop agenda by the ZBSA).

Archaeo(zoo)logical long-term studies will stand side by side with more focused archaeo(zoo)logical analyses of restricted periods of time. The most substantial remains of actual bears from northern Europe come from Sámi bear graves, which were reserved for the animals themselves (Iregren;[1] Sommerseth), followed by skins from burials that have been preserved (O'Regan on England; Grimm on Norway and Sweden; see also Grimm 2013; Mannermaa et al. on Finland). Bear skins have also been documented, either preserved or in written records, in front of church altars (see Jahnsen on Norway and Korhonen on Finland). Furthermore, there are bear images and bear figurines from the realms of archaeology.

For mainly younger times, all kinds of non-archaeological sources are taken into account, e.g. pictorial and written, or more detailed art-historical, historical, literary and philological ones. In addition, the history of religion also plays an important role. Often, different kinds of regions have been chosen in order to analyse whether there were common or only regional developments. Ultimately, such an approach will lead to a synthesis that is substantially broader than what archaeo(zoo)logy can achieve alone. This is particularly true for the consideration of "raptor and human" and "bear and human" themes, for which there is a wealth of material from different academic fields.

In the context of the present book, the decision was taken to focus attention on northern Europe in a broad sense, from England in the west to parts of Russia in the east but, even for this restricted area, it is a sheer impossibililty to provide a complete record of all the relevant sources. This cannot be realised, no matter how extensive the book. At the same time, surprises come into play, and new topics emerge. Hence, all that can be hoped for is to achieve a "critical mass" on the basis of which common and loose threads can be identified and future research be promoted.

Decisions had to be taken about the scope of the book, and it was considered necessary to include all different populations from northern Europe, which were distinguished by their languages: north Germanic and Finno-Ugric (Sámi and Finnish/Karelian). In turn, one very important find material has been deliberately omitted due to its extensiveness and geographic location – caves in France with Late Palaeolithic bones and paintings of cave and brown bears (see for example L'ours dans l'art 2018). Another basic decision was to focus on brown bears, with the exception of one Later Upper Palaeolithic polar bear found in southwestern Norwegian Rogaland (see below). Finally, in order to avoid an Eurocentric view, one of the papers in the book (Hull) rightly considers bear-human interactions in North American indigenous cultures from an archaeological and ethnographic point of view, with a focus on the so-called Mound Builders in the area of the present-day eastern United States of America – the Adena, Hopewell and Mississipian cultures (800 BC to AD 1600).

1 Names in small caps without year relate to articles in the present book.

Milestones of research

Bear-human interaction has left multiple traces from the Stone Age onwards and it cannot come as any surprise that this has attracted the attention of scholars for many decades. Naming only two scholars and their influential publications cannot do justice to the subject but, in the present context, it will have to suffice.

A first milestone, the Ph.D. thesis by the anthropogist and archaeologist, I. Hallowell (1926), is still widely used and quoted. The controversy over his main thesis, according to which there was one type of bear ceremonialism in the northern hemisphere, but with variations, also resonates in this volume.

A second milestone of research is the book published by the French historian, M. Pastoureau, with the title that says it all (in English translation) "The bear – history of a fallen king" (Pastoureau 2008; see also Pentikäinen 2007, but with a focus on Finland). In short, the bear is supposed to have been regarded as the king of the forest and its animals, and it was deified by humans in the olden days before it became dethroned and humiliated in Christian times and was replaced, for example in heraldry, by the lion, an exotic animal. This is supposed to have happened in the period from the 11th to the 13th centuries AD, with examples given for western, central and northern Europe.
In addition, according to M. Pastoureau, the bear assumes three roles in mythology:
- transformation,
- relationship between a male bear and a human female ("the beauty and the beast"),
- mother bear takes up a human child and nourishes it.

In its outline, the present book has a focus on northern Europe and its own agenda (see above), detached from the works of I. Hallowell and M. Pastoureau. However, both are addressed repeatedly in articles, and we shall come back to this at the end of the present text.

Biology

Worldwide, there are eight different bear species, which share a lot of characteristics (Bieder 2005). In the present book, the focus is on the the brown bear and its European populations (Zedrosser/Swenson). Those in Sweden and Finland are among the largest ones in Europe, whereas Norway only hosts a marginal population at the border with Sweden. In comparison, in Denmark (Klassen/Gregersen), England (O'Regan) and Germany (Schmölcke) bears have been extinct for hundreds of years, if not (much) longer.

Modern day bear managemement either deals with the recovery of small and endangered populations, or the control of bears via regulated hunting (Schneider et al.). The Scandinavian Brown Bear Research Project (SBBRP, see Swenson/Brunberg) has carried out large-scale and long-term research, with the help of many doctoral and post-doctoral studies that cover a multitude of topics, such as bear genetics (Kopatz), social behaviour (Zedrosser et al.) and hibernation (Friebe et al.) as well as mating systems and sexually induced infanticide (Zedrosser et al.).

We can learn from this, amongst other things, that the brown bears on the Scandinavian Peninsula can be ascribed to two larger groups based on distinctive lineages (or clades) with characteristic mitochondrial DNA haplotypes (Kopatz; see also Lindholm/Ljungkvist). These genetic clades reflect the Scandinavian bears' phylogeography, which is shaped by the faunal history and colonisation of the area from the south and the northeast after the last glaciation. A contact zone between the clades has been identified in northern Trøndelag (Norway) and northern Jämtland (Sweden). The question remains if this contact zone is a result of long-term developments or rather a product of recent hunting pressure and habitation loss due to human expansion.

Funeral hymns have been sung for the bear and its inevitable extinction, in Europe but also globally (Bieder 2005; Pastoureau 2008). The present book provides a status quo for brown bears in Europe (Zedrosser/Swenson), which today are more abundant than they were in the 1960s and 1970s. This is part of a more general trend towards large carnivore recovery (personal communication, Andreas Zedrosser).

Bears: Fact and fiction

In the framework of the present book, two questions have re-occurred, which is why a check on what is fact or fiction has been made from a biological point of view (see Grimm et al.).

Firstly, bears do not attack on their hindlegs but may fight that way. Standing enables bears to sniff the air, listen to sounds from a higher vantage point, observe, reach for food or an object, or to scent mark – a behaviour that is wrongly considered as aggressive by human observers. When bears are truly aggressive and intend to attack a prey or opponent, they come in low and fast on all four legs. However, the animals will sometimes fight in a standing position. For example, a bear may slightly rise on its hindlegs in order to have its forelegs available for fighting off attacking dogs.

Secondly, brown bears have been commonly portrayed in fairy tales and historic western literature as slow, both mentally and physically, and they are commonly outwitted by the smart and quick fox in fairy tales (Böldl; Hirsch; to some extent, Veselova, on fairy tales; but see also Hirsch for positive roles played by bears). This is, to some extent, based on observations in nature which, however, are misleading. Sometimes, bears move slowly and seemingly clumsily, and other animals follow them to scavenge on food resources found by them, for example a deer carcass. However, observers should not be fooled as bears are most definitely highly intelligent animals with an incredible adaptability and ingenuity, especially when it comes to gaining access to food. A striking example: According to hunters, some bears backtrack in their own footprints to throw off pursuers (!) (Bieder 2005, 24). The idea about the smartness of the bear has likely also been triggered by its similarities with humans and its supposed ability to understand human communication, which resulted in taboo names for the animal (see below). The negative views about bears go back to Christianity, in which animals were perceived as mere objects and even, as in the case of the bear, as Satanic creatures (Pastoureau 2008, 145). However, Plinius (*Naturalis historia*, book VIII) had a similarly negative opinion in antiquity.

Furthermore, a wonderful yarn has been spun with regards to bear cubs which, from antiquity onwards (Plinius, as before, amongst others), were wrongly considered as mere lumps that had to be licked by their mother into proper shape (Hurka; cf. Pastoureau 2008, 92–94). This found resonance even in early Italian art (1250–1400), in the *Dittico di Santa Chiara*, exhibited in the Pinacoteca Nazionale in Siena (Italy). In this context, the licking of the mother symbolised how Christ converted the gentiles (Van Os).

Brown bears / polar bears

As already stated, this book is about brown bears in northern Europe. However, one article describes the remains of a polar bear that came to light in southwestern Norway (Armstrong Oma/Kristoffersen). Found beneath a laundry on an island (Finnøy) to the north of Stavanger, its bones date back around 12,000 years and represent the oldest such intact specimen. The new display of the animal in the Archaeological Museum of Stavanger is discussed on different levels, such as the polar bear's status as a charismatic animal, today threatened by climate change, but also as a toy: Finn from Finnøy.

As a matter of fact, polar bears are represented in this book more often. As we can learn from written records, their furs were placed in front of Norwegian church altars in order to warm the priest's feet (Jahnsen). Another find from a church context is a figurine – a polar bear – that came to light under an older stone pavement near the altar during excavations in the 12th-century Norderö church in Jämtland, northern Sweden (Noderman 2009, 142–144).

Polar bears also play a role in the Iceland-based fairy tale "The man from Grimsö and the bear" (Hirsch). The medieval German tale *Schrätel und Wasserbär* (late 13th century) has a polar bear as an actor, too, in a period in which such bears had replaced brown ones as royal gifts; their white furs made polar bears light, pure and "tame", following Christian colour symbolism (Obermaier; see also Ahrland/Magnusson on a polar bear, a gift from Tsar Peter I of Russia, which was kept at the royal court of Stockholm in the late 17th century).

Similarities: Bear and human

Bears were not just "another kind of beast". On the contrary, they share a lot of traits with humans – the same stature, same silhouette, walking on the soles of their feet (rare among animals), standing upright, the hand-like use of the forepaws, and so on, which turn the animal almost into a "disguised human" (personal communication, A. Zedrosser; see also Pastoureau 2008, 83–84). It is also easy for a human to "become" a bear by wearing a fur, pulling the shoulders forward and walking wide-legged. Because of these similitarities, as well as their brute strength, bears were both admired and feared by humans, and, either living or dead, treated with great respect, if not as equals.

In this context, the villagers, farmers and hunters of Zapinejie, Arkhangelskaya oblast, in the northern part of European Russia deserve a mention (Tutorski). As a matter of fact, this village of 500 persons is many kilometres away from the next settlement. The inhabitants are used to encounters with bears as they spend a lot of time in nature and the forest, gathering berries, hunting and fishing. In their tales, bears occur as forest owners. They very much do what humans do and are thus equal, walking through the forest, gathering berries, and so on. The humans would say with a low voice: "I don't bother you, you don't bother me". However, if bears act intrusively – entering the village, entering storage houses by force to steal tinned food – this would result in their being despatched, but regretfully so by the hunter as this was considered enforced. However, if bears come face-to-face with humans close up and by surprise this may actually lead to an attack (personal communication, Andreas Zedrosser).

Hunting

We have a fairly good source at hand for bear hunting in northern Europe – the writings of the Catholic cleric and bishop of Uppsala, Olaus Magnus (1490–1557), who had to go into exile in 1524, following the Reformation. He is also well-known as a cartographer and geographer who left the most informative resource on pre-modern concepts of the bear in northern Europe (Oehrl 2013; see also Almond). In this respect, ancient and medieval learned literature, but also popular beliefs, were integrated (Böldl).

Three different kinds of bear hunting are distinguished by Olaus Magnus and illustrated by woodcuts in his work: pit trapping using honey as a lure, sneaking up and using a crossbow while the bear eats fruit from a tree, and, finally, the surrounding of the bear by hounds and huntsmen, with the beast stabbed by using a hunting spear with "stoppers". This stabbing was very dangerous and it made the hunting and the despatching of the bear a "heroic act" (on the killing of animals see more generally The

Animal Study Group 2006; Bronner 2008; Ulrich/Ulrich 2014). Until rather recent times, bears and other wild animals were driven into lakes in Sweden during battues (see Ahrland/Magnusson).

As to Classical Antiquity, triumph over the strong bear symbolised the human virtue of fortitude but, even more so, the heroic power of the emperor (Horn). One of these emperors, Commodus (180–192), is said to have killed 100 bears on one day in the arena (!), but bears were also kept as pets in antiquity (Hurka; see also Ahrland/Magnusson on royal and heroic bear hunting by Swedish kings). The hunting of bears occurred as a royal or aristocratic pleasure on the one hand and as pest control on the other, which decimated populations, to say the least. In Oppian's hunting book, *Cynegetica,* which dates from the late 2nd century AD, trapping by flushing the bear out of its den and capturing it in nets, or by using traps, is recorded (Almond).

There are more sources from Antiquity. The outstanding, excellent bronze she-bear in Aachen cathedral was originally part of a Greek sculpture group that showed a hunting party of the 3rd century BC (Künzl). Bear hunting imagery is also known from a Late (East) Hallstatt burial (Kröllkogel, Kleinklein, Austria) that dates to the middle of the 1st millennium BC (Augstein). Furthermore, the early Byzantine exquisite brass jug from a burial in Budakalász, Hungary, with its hunting imagery, also deserves attention (Horn).

If one looks back a long way, there is yet another pictorial source for the technicalities of bear-hunting: rock art, known not least from the UNESCO world heritage site in Alta, northern Norway, with a dating to the Mesolithic/Younger Stone Age, *c.* 5000 to 1700 BC (Helskog 2012). The bear imagery from Alta amounts to not less than 105 items, unique for northern Fennoscandia, and to some extent it belongs to narration cycles. As the rock art shows, amongst other things, this early hunting took place at the bear's den, with the animal being awakened and killed when leaving the den by a hunter with a spear. This kind of hunting is known from the Sámi in more recent times, with entire hunting parties being involved, and oversize spears, longer than the hunters and without "stoppers", but also axes were used (see Iregren).

Art history yields an abundance of images that relate to the bear hunt, too (Almond). To some extent, the depictions originate from the iconic book, *Livre de chasse*, written by Count Gaston Fébus (1331–1391) of Foix (southern France). It is important to keep in mind that the given imagery might be misleading and idealised because, in the field, the venator will have to adjust to the given situation, which cannot be planned beforehand. One exquisite and beautiful find material from the realms of art history are hunting horns, but it will have to remain open as to if and how often depictions of bears/bear hunting occur on these (on olifants see Shalem 2014).

Place names will not be forgotten. As is demonstrated for southwestern Norway, bears are the wild animal species most frequently mentioned in place names. These names are often difficult to date but, in fact, a considerable number of such denotations goes as far back as the 1st millennium AD. Not only do such names allude to places where bears were present but also to trapping, either by using natural rock formations, such as clefts, or by wooden or stone constructions (Særheim). Apart from the bear name as such, circumlocutions also occur, such as *Godfardalen*, the valley of the grandfather/good father (= bear; see below on taboo names).

In modern times, beaters and dogs drive the bear to locations where hunters are waiting. These then shoot at the first sight of the bear. This can lead to danger if the bear is only some meters away and launches a fake attack, in which case the hunter is well-advised not to shoot but to run (personal communication, Andreas Zedrosser; see also Dirke on 19th-century bear hunting in Sweden). Demographic effects on bears from hunting are well documented, whereas behavioural ones are not (Ordiz et al. 2012). In fact, hunting influences the movement patterns of brown bears since they reduce their activity in the daytime during the period of hunting, which is against their nature. So, here is confirmation: Bears know that they are hunted (see also Dirke).

The well-known anthropologist G. Marvin (2006) has considered hunting to be a cultural and social pursuit, not – as hunters sometimes argue – as predation on other animals by humans. It is different from nature since planning and premeditation is needed, whereas hunting among animals only comes into play when prey becomes visible. Hunting involves the killing of animals but, notably, not all animal killing is hunting. Two types of despatching are distinguished by G. Marvin; a domestic type by professionals in the context of the meat industry ("cold killing") or pest extermination ("hot killing"). In the latter case, this presupposes some knowledge of the landscape and animal. In contrast, wild killing is that of non-professional, knowledgeable sportsmen engaged in a "quarrel" between the hunter and the hunted. As has been noted (Dirke, see below), in 19th-century Sweden, sport and extermination targeted against bears were one and the same, and thus not in line with the aforementioned categorisation. Apart from that, we simply do not know about the perception of the animal itself which, as stated already, knew it was being hunted.

Finally, from the viewpoint of a hunter, bears were a rich resource (personal commmunication, Andreas Zedrosser; see also Pastoureau 2008, 34). An average adult brown bear is 2.30 m in height and has a weight of *c.* 220 kg in spring after hibernation but weighs 20–30 % more in autumn, due to the accumulation of body fat. In historic times, bears provided meat for nutrition, fat for light-making, bones as raw material for tools, weapons and fuel, and, furthermore, skins were used for garments or as rugs/covers. A bear is a large animal that yields a considerable amount of edible meat. However, the taste of the meat is dependent on the bear's diet. For example, the consumption of large quantities of berries may result in a sweetish and unpleasant taste of the meat (personal communication, A. Zedrosser; see Kirkinen on bear meat soup from Finland in the context of bear ceremonialism and bear recipes).

Human-Animal Studies and animal agency

Be it a consequence of the domestication of animals from Neolithisation onwards, and the persecution of others in order to protect land and flocks, be it Genesis 1:28: "Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground", or be it the Industrial Age with its capitalism and factory farming, a change in attitude towards animals has not only been called for but also set in motion, with the influence of the animal liberation movement of the 1970s on science (see below). The influential English thinker John Berger asked "why look at animals?" (Berger 1980) with a description of how they were devalued in history and have disappeared more and more in most recent times, while pets have come to play an increasing role and zoos have only led to unnatural behaviour in animals.

In what is labelled the "animal turn" (Ritvo 2007, see also Andersson Cederholm et al. 2014), non-human and human animals, as they are sometimes called, are now described with the intention of granting the animals a proper place as "agents" of their own and to dispense with the anthropocentric and utilitarian view on animals (see e.g. DeMello 2012; Roscher 2012; and, as handbooks, Marvin/McHugh 2014; Ferrari/Petrus 2015; Kompatscher et al. 2017; Roscher et al. 2021). Ultimately, a post-humanist approach has been chosen (e.g. Haraway 2003; 2008; although this label is rejected by Haraway [Harris/Cipolla 2017, 162]; see here Fredengren 2021 and Jennbert 2021 from an archaeological angle). In this context, the bonmot by the French anthropologist Claude Lèvi Stress, according to which animals are not only good to eat but also good to think comes to mind, too (Bakels/Boer; cf. Lévi-Strauss 1964, 89).

It goes without saying that Human-Animal Studies are at their best with the use of written and pictorial sources – the more recent the better because of their growing number. This will allow substantially more detail than archaeo(zoo)logical research, which may be considered a newcomer

in this field. Such a narration misses, however, that in archaeo(zoo)logy not only have animal bones been analysed in surprising detail for decades now, but they have also been placed in a wider context which, depending on the field of research, means more than a purely utilitarian consideration at the expense of animals (see here Harris/Cipolla 2017, 154–156 on older research to that effect and the highly influential paper by Overton/Hamilakis 2013, which is already under the influence of the "animal turn").

A very good case in the context of Human-Animal Studies which goes beyond utilitarian thinking can be made for the archaeology and history of falconry as an expression of the delicate relationship between a raptor that, strictly regarded, is not interested in becoming domesticated and only responds to positive reinforcement while a human has to try to find acceptance by the bird (MacDonald 2014). This means the day-to-day care of the bird and not only hunting, about which the falconer says, quite remarkably, that the bird goes hunting with the human and not the other way around (personal communication, Karl-Heinz Gersmann). Following a term by the biologist and ethologist Konrad Lorenz (Lorenz 1935) who, however, referred to the biologist Jakob von Uexküll, bird and human can be described as companions in the context of falconry (Bednarek 2018; see also Schroer 2018). In the framework of the present book, bears are considered in multiple layers that go far beyond the notion of the bear as prey in hunting.

Although bears – in order to return to our topic – have been extinct in Britain for a long time, they were a common sight in early modern English cities in connection with bear baiting (in the following: Lewis). Sources include travellers' accounts, the diaries of bearwards, and archaeological remains. In the arena, bears, which had often been blinded beforehand, were either attacked by dogs or whipped, while the spectators smoked tobacco, drank wine and beer and ate fruits and nuts. While it would be in the nature of bears to quit the scene, they were tied to stakes, and faced death, but they fought bravely or, rather, desperately. However, there was an ambivalence about the bears. In the early 17th century, the author, Thomas Dekker, showed compassion with the animals baited in arenas, and he humanised the bears to a certain degree, while their tormentors, those with the whips, were considered to be half human and half animal. Notably, "poor [human] wretches" were also whipped in public.

The Bible and Humanism have placed humans at the top of living beings and thus devalued animals (still Lewis). In Humanism, there also came to be fundamental divisions: human vs. animal, science vs. religion, nature vs. culture (see here also Horn on dichotomies in Classical Antiquity). Posthumanism calls for a new approach towards animals, and here the eye contact between animal and human becomes essential. It implies the chance to establish an alternative form of contact, to come together as companions and to learn more about the other. In this respect, the encounter between the naked French philosopher J. Derrida and his cat that stares at him in the bathroom is the key scene (Derrida 2002, 372; Haraway 2003; 2008, 20). Since the aforementioned bears had been blinded, however, they could not return eye contact and this excluded them from connecting with humans (see above).

A close relationship between human and bear, unique in its time (with a general preference of lions over bears as carriers of symbolism/iconography of power), is well documented for Duke Jean of Berry in France (1340–1416), also called the "bear prince" (in the following after Pastoureau 2008, 234–246; see also Horn for imperial iconography in Classical Antiquity, and likewise Ahrland/Magnusson for royal/aristocratic imagery from Sweden in the period post-1000). To cut a long story short, not only did his seals repeatedly depict bears, but the animal also served as his identification and ownership mark and his attribute, in the form of architectural sculptures and in his books, documents and small pieces of art, too. On top of this, the duke had several bears in his two menageries, in which he also kept other (including exotic) animals. Remarkably, his bears bore the names Chapelain, Martin and Valentin, and their actual name-giving may resonate with bear folklore. Furthermore,

Jean of Berry had a master of bears who cared for the animals over many years, and this turned out to be quite expensive. His favourite bear was even with him on his voyages and, when the duke was buried, its image was carved on his white marble effigy. Thus, the duke's commitment to bears is well documented, but one can also see animal agency at work, i.e. bears with their own characters, which were recognised by a human.

A view on killer bears and bear killers in 19th-century Sweden can be gained from an analysis of hunting books written by Herman Falk (a professional hunter and royal forester) and Llewellyn Lloyd (an Englishman and private hunter). Notably, in the 19th century, bear hunting was no longer an aristocratic privilege but was open to commoners (in the following: Dirke). Hunting books had a logic of their own, with a preference for good entertainment provided by the description of violent, adventurous encounters with aggressive, attacking, fierce and very large bears. The description of battue hunting, sometimes with thousands of participants (!) is reminiscent of warfare. At the same time, however, there is a certain ambivalence (see above on T. Dekker). Falk, who knew bears well, stated that they are majestic animals which evoke both fear and awe. According to Falk, despite the danger they pose, these animals should not be hunted to extinction. Bears, in their encounters with hunters, feel anxiety and not aggressiveness. They experience a landscape of fear and know, as stated above, that they are being hunted. If one gets to know the bear, and this was the case in a day-long hunt, Falk concluded, one finds it worthy of protection. This perception of the bear grew from a shared experience of hunters and bears and, eventually, it led to the relative protection of the animal in Sweden. It also needs to be considered how the worldview of the bears themselves was changed by the 19th-century extermination policy; up to what extent can we back-project present-day behaviour of bears?

Literary texts by the famous Swedish author, Selma Lagerlöf, who was granted the Nobel Prize for Literature in 1909, represent different ways of considering the bear at the turn of the 19th to the 20th century, the *fin de siècle*, when it had almost been wiped out following a state extermination policy; from the mythical, dangerous animal, in a long northern European tradition (chapter in "The story of Gösta Berling"), to the human's neighbour in a Christian sense (Christianity being a latecomer in northern Europe [short story: *The Truce of God]*) and, finally, the endangered species, on the verge of extinction (school book: "The Wonderful Adventures of Nils") (in the following: Lindén). Lagerlöf describes the tension between the individual level (human and bear as equal to one another and in a mutual relationship, with hunting being out of the question) and the societal one (human beings and their achievements are meant to dominate over the animal, which implies that it should be despatched when it is considered to be an obstacle). However, Selma Lagerlöf opens up a Christian, ethical dimension (Luke 10:27 and Mark 12:31: "you shall love thy neighbour as yourself") with the inclusion of wild animals, and she problematises the human-centered paradigm.

As we have seen, medieval historical and modern literary texts allow a wealth of insight into the bear-human relationship that goes far beyond what archaeo(zoo)logy can achieve. However, there is a need to look further back in time. In the Finno-Karelian hunting cultures, bears and *haltias* (guardian spirits) were considered agents with will, intentions and desires, and the behaviour of humans was interpreted from their own perspective (Piludu). The hunters, on their part, had to develop a complex ritual relationship with the bear and the forest *haltias*. In the present case, the attribution of animal agency could hardly have been any more elaborate, but this cannot come as a surprise since it was the result of the animistic beliefs of humans.

Taboo Words

The strongest indication that the bear played a special role for humans are the taboo words in different languages: Germanic ("the brown one"), Slavonic ("honey eater"), and Baltic (two types: "the brown one" under Germanic influence and "animal hair, fur" or "mauler, lacerator" under Slavic influence) (Udolph; see also Nedoma on the Germanic languages, and Særheim mainly from the viewpoint of place names in southwestern Norway). In the present cases, a so-called noa-name replaced the taboo word (Særheim), "noa" being a term from the Polynesian language, which is also true for the word "taboo".

If one uses the bear's real name, so the humans feared in animistic belief, this could be overheard by the animal and cause an unwanted, dangerous encounter, or scare it away from the hunter. Another motive could have been the avoidance of the real name based on the reverence for the animal.

Remarkably, this taboo is found in only some Indo-European (Indo-Germanic) languages, whereas in others, such as Greek (*árktos*) and Latin (*ursus*), the proper inherited word was used, whose etymology, however, is uncertain, but, notably, there was no taboo (see Horn and Hurka on the role of the bear in Classical Antiquity). In other cases, such as the Sámi (Sommerseth) and the Finns/Karelians (Piludu), there were real terms for the animal but, since the same kind of fear prevailed, a wide variety of circumlocutions was used. Entire worldviews could be reconstructed on these variations in languages.

However, there is a need to go into even more detail. As regards the Germanic languages, this taboo probably goes back a very long time, to when there still was a uniform language (Proto-Germanic); in later times, with the giving of the personal name, Björn (the noa-word), which used to be and still is quite common as a personal name, there was no longer any knowledge of how this name actually came to be (personal communication, Robert Nedoma). Finally, it is also worth a mention that, in 18th-century Sweden, bears were called e.g. "gold-foot", "the big old man", "the ugly guy", "rascal" and "grandfather" (Nedoma). So, there was a "secondary taboo name-giving" with the lack of recognition that the word for bear, "the brown one", was in itself a noa-name.

Germanic name-giving before AD 1000 often included references to sovereignty, power, strength and warfare, combined with the names of powerful animals (in the following: Nedoma). Wolves dominate, followed by boar, eagles, and bears. Interestingly, personal names of this kind, with their reference to animals, do not belong to the oldest layer of the Germanic language. They cannot be found before the 4th century AD and follow a general trend in Late Antiquity name-giving, as for instance in Latin (including the term *ursus* for bear). A name like the West-Frankonian *Hilde-bernus* "fight" + "bear" may allude to animal warriors (see below on berserker) but caution is due – was this really a matter of deliberate name-giving with full awareness of the name's formation and meaning?

The bear ceremonial

The aforementioned rock art from Alta (northern Norway) shows, amongst other things, hunting at the bear den, with an armed hunter waiting for the bear to come out. Sometimes, and quite remarkably, an unarmed person is connected with these hunting scenes. Who is this person? Was it a "ritual specialist" and was there already a bear ceremonialism at this time? As has been argued, the rock art from Alta might represent a clan with its totem animals, guardian spirits and spirit helpers (Helskog 2012; see also Hull on the different roles of the bear among the indigenous population of North America).

It is only a small step from the aforementined taboo words/circumlocutions for the bear to the ceremonialism that in northern Europe is well documented for both the Sámi and the Finns/Karelians

(see below). It was embedded into a religion in which ritual specialists ("shamans") played a central role, alongside the belief in the power of gods, heroes, ghosts – and bears.

Sámi bear ceremonialism had three elements – the bear hunt, the bear feast, and the bear grave (Rydving; see also Iregren). The bear is often depicted on the sacred Sámi drums which, amongst other things, were used by ritual specialists in order to invoke the goodwill of the god *Leibolmai* before the actual bear hunt (Sommerseth). This *Leibolmai* was the leading hunting god and was considered the bear's protector and leader, who had to obtain prestigious goods as offerings, such as bows and arrows, before he would bring about good hunting fortune. On one of the Sámi drums, one can actually see the bear walking towards *Leibolmai,* both on their way to the "sacred mountain".

Finnish/Karelian bear ceremonialism also had three elements: the bear hunt, the bear feast, and the bear skull ritual (in the following: Piludu, also briefly on ceremonialism for other large wild animals, primarily elks; see also Keinänen for swidden cultivators in Savonia, Finland, and central Scandinavia and Kirkinen on bear meat soup). The heroic bear hunter was not only a model for manhood but also the ideal groom for a village woman, whereas the mistress of the house or village welcomed the bear when the hunters entered the village with their prey. During the feast, the bear's head, which as the seat of the soul was ascribed particular power, was reserved for the hunters, whereas its teeth and claws were removed from the carcass for future use as amulets. By treating the bear respectfully, its regeneration and return was hoped for, along with good luck for future hunts. An evergreen sacred pine was used for deposition of the bones, with the skull placed in the branches and the bones buried beneath the roots (see also below on the Frösö site in northern Sweden).

Among the Finns/Karelians, the forest was considered a mythic and sacred landscape owned by non-human persons; the powerful forest *haltias* (guardian spirits), foremost of which was Tapio, the master of the forest. These spirits, but also bears, could see, listen to and understand human speech and the hunters' actions (see above). This is why bear ceremonialism had to please them. The bear, regarded as a being of partly human origin (due to the similarities between the two), was particularly sacred because it had a deep relationship with the aforementioned spirits and, quite tellingly, one of the bear's circumlocutions was "forest". The bear could even share with its master, Tapio, the honourable title of "(golden) king of the forest" (see below).

Quite remarkably, three eras of Finnish/Karelian bear ceremonialism have been described: First were the hunters and gatherers, they had "shamans" who travelled to other worlds, and who practised a bear skull ritual that related to the natural environment of the bear; second were the peasants, the bear then was the enemy of agriculture and flocks of animals, and their ritual specialists, *inter alia*, counteracted sorcerers or healed sicknesses; third was the era of the countryman in Christian times, in which saints took over the role of the earlier forest spirits (Piludu, referring to the work of M. Sarmela; see also Korhonen). This argument has been criticised for, amongst other things, being oversimplified but, undoubtedly, the most substantial changes in lifestyle/religion have been identified correctly, when observed over the long term (see below). Interestingly, a rather late facet of this ceremonialism no longer aimed at allowing the reincarnation of the killed animal, it was just sent back to its origin (Keinänen).

What remains are the differences in Sámi/Finnish-Karelian bear ceremonialism, with regards to the third element – the bear grave vs. the bear skull ritual. Remarkably, aspects of that bear ceremonialism find support in archaeology, i.e. Sámi bear graves in Norway and Sweden (see below; cf. Iregren; Sommerseth), and ethnography, i.e. still-existing trees in Finland that were once connected with the final part of the ceremony (Piludu).

Furthermore, Sámi offering places in Fennoscandia, which included bear remains placed visibly on the ground or below rock formations, must also be taken into account (Spangen et al.). Research on these sites, mainly in northern Sweden, is, so far, limited. Depositions of bears, mainly cranial elements, go back to the middle of the 1st millennium AD, as can be seen at the famous Unna Saiva

site in Sweden; later (post-1000) reindeer came to dominate deposition sites (lesser offerings of antlers, foodstuff, and so on, continue to the present day). "Powerful" bear crania were a means of transforming non-descript spaces into sites of particular meaning, quite possibly also in the context of underlining territorial rights.

The discussion about bear ceremonialism will be returned to at the end of this text, and it will include the question of whether there was such a thing among the speakers of the north Germanic language, too.

Berserker

It goes without saying that bears have been discussed for decades in connection with the so-called berserker, members of warrior-clans clad in bear skins, as known from Old Norse written sources (Sundqvist; see also Lombardi; Nedoma; Ney; also Höfler 1934; Samson 2020). However, it is important to keep in mind that for the first name element there are in fact two interpretations, "bear" being one of them and "bare" being the other, whereas the second element undoubtedly denoted a "shirt" (Nedoma).

Remarkably, warriors in bear skins are also described in Classical Antiquity, e.g. the Arcadians wore bear skins and also wolf skins during battle, according to the 2nd-century writer, Pausanias (Hurka). More famously, however, bearers of standards and effigies in the Roman army wore bear skins or heads (Künzl). At the end of the 4th century, Ammianus Marcellinus (*Res gestae*, liber XXXI, chapter XVI) wrote that it was a custom of the probably east Germanic tribe of the Taifals that a young man had to kill a boar or a bear in order to be admitted to the warrior community, which probably reflects some sort of initiation ritual (see below on the Torslunda finds; see also Sundqvist; Oehrl 2013, 308).

For purely practical reasons, one has to take as given that such berserker wore skins only before actual battles because they were of a considerable weight (estimated 10 kg for an adult bear individual), and there would have been the problem of fastening the skin to the body (personal communication, Andreas Zedrosser). In the present context, the "master warriors" who were placed on bear skins in their graves come to mind, but they reflect a Migration Period phenomenon (see below).

If one shifts the focus from the berserker, other animals – such as raven, eagle and wolf – were in fact more important for north Germanic religion in the Viking Age, if not earlier (Sundqvist). In the case of skaldic poetry, an elaborate form of poetry that was recitated at courts and goes back, to some extent, to the late Viking Age, bears occur in such wonderful kennings (rhetorical tropes that draw heavily on figurative language) as "bear of the sea", a circumlocution for ship (Lombardi). However, the actual animal is only represented to a decent degree in the context of hunting without a link to mythology. As a sidenote, the famous Beowulf, in fact the Bee-Wolf, from which the Old English poem takes its name, is yet another circumlocution for bear, used as a by-name (see also Nedoma). It is also worth a mention that fairy tale-type ATU 361, "Bear-skin", that is also known from northern Europe, has no or very little connection to the belief in berserker (Hirsch).

Thus, it is not legitimate to ascribe a central role to the bear in Germanic religion, and the placement of bear skins in front of church altars was not a symbol of the degradation and humilitation of the once venerated animal (Jahnsen for Norway; Korhonen for Finland; as to the latter country, however, the bear was held in high esteem and Christianity came later).

Finally, it has to be recalled that it was not only bears and their skins that played a role in martial cults, but also wolves, according to Old Norse literature (Sundqvist). As just stated, they played a more prominent role in north Germanic religion than bears, but there was no name taboo. In this context, runic stones from the southern Swedish landscape of Blekinge are worth mentioning (on runology: Krause/Jahnkuhn 1966, 203–220; broadly on philology and cultural history: Schulte

2015; on archaeology: Carstens/Grimm 2015). Four runic inscriptions on stones point towards a lineage of so-called "Wülfinge" (wolflings; *-*wulfaz*), as the first element in the names of the relatives refer to "wolf", a very powerful animal. It is a tempting thought but it will have to remain open if a deliberate name-giving was made with full awareness of the name's composition and meaning (personal communication, Robert Nedoma).

Bear festivals

Present-day "bear festivals" in the French Pyrenees, acknowledged as Intangible Cultural Heritage by UNESCO, and elsewhere (for instance, in Romania) seem to resonate with folklore about the fertility of the bear in its yearly cycle, with hibernation in winter and resurrection in spring – "bears bring spring" (in the following: Bakels/Boer). An anthropological field study at one such festival on the 2nd of February 2016 in Arles-sur-Tech shows the following elements: the awakening of the bear, sex and marriage with a human female, the killing and resurrection of the animal. These festivals act as identity symbols and are probably more popular than ever.

Wild animals, such as bears, seem to be far removed from everyday life in most of present-day Europe and are met with little understanding – as can be seen by the fate of Bruno, the so-called "problem bear", who lived in the border region of Germany and Austria and was despatched by an order of the authorities in 2006, without having shown the slightest sign of being a threat to humans. Was there a kind of pact earlier on between bear and human that allowed both to lead their lives by the acceptance of certain rules, and should such a pact be rewritten (see also Ahrland/Magnusson, and below)?

It is an open question as to the extent to which these festivals echo at their core earlier, pre-Christian beliefs. Notably, in parts of Norway, bear claws or paws acted as amulets or bringers of fertility until the most recent times – but here the question of the longevity of traditions, the long run, is again relevant; is this really anchored in pre-Christian times (see e.g. Mansrud; Jahnsen)?

Novgorod is an extraordinary case in question; no less than 89 drilled bear fangs (canine teeth) have been found, among a larger number of altogether 239 finds, which represent the (canine) teeth of other animals. Remarkably, these "amulets" with an assumed apotropaic function do not belong to early pagan Novgorod pre-1000, but to a later phase with a peak in the period from the 12th to the 14th century (Tianina).

Male bear and human female / mother bear and human child

According to Saxo Grammaticus, in his *Gesta Danorum* (X, XV), and Olaus Magnus (18, 30), the royal Danish family had a male bear among the ancestors (Pastoureau 2008, 102; see Ahrland/Magnusson and others, this volume). Further genealogies to that effect are known from central, western and northern Europe (Pastoureau 2008, 102–106). In these cases, bears were not only fathers but they bestowed power, virility and fertility on their sons who were to become mighty rulers. Bear daughters are recorded, too (Hirsch; see also Ney on the role of she-bears in Old Norse literature).

This kind of genealogy leads further to the fairy tale type ATU 301, the "Bear's Son Tale", whose main character is the offspring of a male bear and a human female (Frank; Hirsch; see also, to some extent, Veselova for Russian fairy tales and, notably, Iregren for the Sámi). A variation is included in the collection ATU 425, aka "The Beauty and the Beast". It is a widely-spread motif in European folklore, and there might even be the opportunity to identify core elements of the narrative and later

additions or changes. Here, helpers from the animal realm (lion, dog, eagle, ant) and the ability to shapeshift into these animals by "Little Bear" (descended from a male bear and a human female) may represent an older and perhaps original layer that, potentially, would echo an animistic worldview of hunters and gatherers, whereas in a younger layer the animal helpers were replaced by huge male figures with extraordinary strength, but shape-shifting no longer occurred.

As was the case before with the bear ceremonialism and the bear festival, the question has to be raised of whether the tale, in its variations, goes back to one common source from which it spread, or whether it represents independent traits developed from the perception of bears, as it was commonplace among humans in different areas. Notably, it is difficult to believe that speakers of entirely different languages, such as Germanic and Slavonic (representing Indo-European [Indo-Germanic]), Basque, and Finno-Ugric shared common themes by communication (see also Hirsch).

Remarkably, in the case of the Basques, they seem to have had a belief, passed orally from times immemorial, that they descended from bears and this had real world manifestations in their beliefs, traditions, rituals and performance art (Frank). In this context, ursine genealogies might also be considered to be embedded in bear cult or bear ceremonials, respectively (see also Hirsch).

Another type of narration – a mother from the animal realm fosters a human child – is best known from the she-wolf that took care of Romulus and Remus, the founders of Rome (Pastoureau 2008, 44–45). However, in other cases known from Old Europe, mother bear assumes that role (Hurka) whereas, quite remarkably, the motif is not represented in fairy tales, at least not in Europe (personal communication, A. Hirsch).

Bear imagery

In Classical Antiquity, mosaic floors in Byzantine churches and chapels (6th century) in the provinces of Jordan, Libya, Palestine, Syria, Arabia, and Greece displayed representations of daily life scenes, adopted from pre-Christian floor mosaics in North African Roman villas (in the following: Horn). These depict birds and different types of animals and beasts, such as bears or lions, as well as men in combat with or chasing wild animals. The mosaics give an impression of the bears' primeval ferocity and exoticism as part of the magnificent God-created cosmos, and as a symbol of the Messianic Kingdom of Peace. Under Christian influence, acrobatic shows increasingly replaced blood sports with bears; bears now made music or performed acrobatics instead of tearing humans apart in the *damnatio ad bestias.* However, *venationes* with bears as an object of fighting and hunting in the arena may have continued for some time in the Byzantine empire.

When it comes to northern Europe, two kinds of bear imagery may be labelled iconic – on the one hand, the already-mentioned rock carvings in Alta in northern Norway (*c.* 5000–1700 BC), and on the other hand the Vendel period helmet plate dies (*c.* 550/600–750/800) from Torslunda on the Swedish island of Öland.

Interestingly, for the latter, it has been argued that the four images have an ordered thematic progression that shows the steps of an initiation sequence (see the discussion by Sundqvist; see also Oehrl). The first two matrices are thought to show how the warrior proves himself against two bears and a monster, the third has the warrior standing in a shield-wall whereby he indicates that the members in the war-band can now rely on him, whereas the final one depicts him dancing in an animal skin together with the god, Óðinn. It is a fascinating thought to suppose such a thematic order, but the question remains whether the images are meant to depict bears, shown with some amount of artistic freedom/alienation, or perhaps rather, to some extent, wolves (see above)?

As regards Sweden, bears have long been a part of people's reality and imagination and this is mirrored in images from different contexts, from rare church adornments to royal iconographies of

power and depictions in recent story-books for children (in the following: Ahrland/Magnusson). Historically, the bear has been perceived as strong, dangerous and easily angered, and Swedish royalty and nobility have identified themselves with these particular qualities associated with the wild. In contrast, when seen in interaction with children in sources from the 19th century onwards, the bear is friendly, docile and good natured. The common thread that connects all these motifs is the readiness to identify with the animal. Remarkably, many ideas and perceptions of the brown bear have remained fairly unchanged in Sweden over time, despite the Enlightenment and modern science. Even today, some of these folk beliefs linger in society and influence the view of this animal in popular culture. Today, there is a strong bond between bears, often cubs, and the emerging generation. One question remains relevant: Who has a right to live in the landscape, human and/or bear, and if there are clashes, who has priority (see above, Lindén on Selma Lagerlöf; Bakels/Boer)?

Bear figurines

Stone Age amber bear figurines in a naturalistic style have been found along the Baltic Sea area (in the following: Gross/Vang Petersen; see also Klassen/Gregersen). Figurines were made of clay, too, and other animals were also sculptured (mainly elks). Except for one Neolithic grave in the well-known Tamula cemetery in Estonia, the bear figurines lack context and reliable dating. However, they are comparable with the portable art known from the Late Palaeolithic and the Early Neolithic. For different reasons, amber was a fascinating raw material; most remarkably, when rubbed against hair or fur, a static electric charge results in green sparks that are visible in the dark. According to use-wear traces, some of the amber figurines had been attached to strings and thus might have served as dress ornaments or, more likely, amulets.

Another type of Stone Age figurine is represented by bear-headed stone axes from Finland, as found, *inter alia*, in Paltamo in the northern part of the country, but bear figurines on their own, made of flint or amber, are also known (Mannermaa et al.). Figural axes (hammer axes) with bear heads occur in the Stone Age of the East European Plain forest zone, too (Kashina/Khramtsova). The presence of elk-headed axes as well suggests that both animals may have served as representations of totem animals, but other meanings, such as that of status symbol or ceremonial object, are likewise possible (Piludu).

Generally, figurines and also images of bears are more numerous than hitherto thought for the 1st millennium AD of northern Europe, as is shown in the results of a survey (in the following: Oehrl). The bear figurine from the western Norwegian Modvo settlement, which dates to the first centuries AD (Roman Iron Age), stands out as the only one of its kind with such an early dating, whereas the majority of figurines/images belong to the time from the Migration Period to the Early Viking Age. Accurate identification is often difficult, due to the non-naturalistic mode of representation. Among the finds, there are bear figurines placed on sockets of spear-heads and sword pommels (Migration or Vendel Period). As has been suggested, in the case of the richly furnished warrior grave 12 from the well-known Vendel cemetery, the relatively broad spearhead and the socket animals, which may have served as some sort of "stopper", could indicate a use as bear spear (see above on hunting).

As to Great Britain, so-called hogbacks, longitudinal sculptured gravestones erected under Scandinavian influence, are worth a mention. Remarkably, some of these have bear figurines at their ends. Muzzles also appear, which identify the animals as being captive. As a matter of fact, these hogbacks imitate long houses or halls and date to the end of the 1st millennium AD (Oehrl; O'Regan).

Finally, bear figurines are also known from modern Sweden (Ahrland/Magnusson). Pillars at each side of the main gate of the Swedish Museum of National History, the biggest museum in the country (inaugurated in 1916), show a she-bear with cubs and a male bear, respectively, whereas

"Playing Bears" (from 1909), sculpted by the well-known Swedish artist, Carl Milles (1875–1955) adorn the Berzelii Park, a small public park in the city center of Stockholm. In both cases, remarkably, bears are no longer depicted as ferocious creatures. There is a change in the perception of the animal. In the case of the museum, the bear figurines stand for Sweden and Swedish nature and represent a bear family while, in the park, playful young bears are represented.

Bear and human: The long, middle, and short term

It is only the consideration of the bear-human relationship over the long term (*longue durée*) that allows us to see the changes in it. This approach goes back to the influential French historian, Fernand Braudel, from the second generation of the so-called French "Annales school" (Burke 1990, 43), and his publication on the Mediterranean world in the age of the Spanish king, Philip II (1527–1598) (Braudel 1949). He also wrote a short programmatic article that explains his approach (Braudel 1958). Braudel found resonance among archaeologists, too. In a book called "Archaeology as Long-Term History", edited by I. Hodder (1987), the Norwegian archaeologist, Knut Helskog, known for his research on the aforementioned rock art in Alta in the north of the country, has published an article on the thousands of years of rock art in Arctic Norway (9000–2500 BC) in relation to much younger depictions of animals on Sámi drums (Helskog 1987). It should be noted that in a book on archaeological theory in the new millennium (the 2000s) Braudel is named only once and in passing, with the critical note that long-term considerations, as a facet of processual archaeology from the late 1960s and the 1970s, were too generalising in their attempt to identify regularities through time and missed important details that could be obtained from a close study (Harris/Cipolla 2017, 197).

In the framework of the present book, different long-term studies have been carried out, spanning the period from the Stone (Bronze) Age to medieval or even younger times. These studies are interesting in themselves but also when regarded together. Largely, this research is based on the evaluation of animal bones.

Regarding Britain, bears are rare in the overall archaeological record, but two themes become apparent; the bear in the grave (Bronze and Iron Age, early medieval times) and the bear in entertainment (bear baiting, dancing) of younger times (O'Regan). As to the latter, did bears find their way to Roman amphitheatres in England and was there an unbroken tradition in bear baiting (see Horn and Hurka on Classical Antiquity)? The animal itself, however, became extinct in Britain in the middle of the 1st millennium AD at the latest.

As to Sweden, its northern part provides evidence for a considerable amount of bear hunting from the Stone Age and onwards, with a ritual handling of bones whereas, in the south, a society of farmers that practised agriculture and animal husbandry may have led to a loss of habitation for bears, which were also hunted to protect the livestock (Magnell). Ritual handling becomes evident, *inter alia*, at the late Viking Age Frösö site, "a bear sanctuary" (?) (see below). Notably, bear parts, be it skins or claws, were a very common grave furnishing, in particular in the Migration and early Vendel Period of Uppland and Södermanland in central east Sweden (see below).

In what is today northern Germany, bears attracted little attention in the Stone Age and onwards, whereas mainly around the birth of Christ bear phalanges served as grave furnishings (Schmölcke). The animals disappeared at different times in the area under consideration, as the result of an increase in the human population and loss of habitat, but also, in younger times, as a consequence of a state policy of bear extinction.

Last but not least, Finland suffers from a general lack of bear bones (Mannermaa et al.). Only *c.* 100 bones are known (!) for seven thousand years of the Finnish Stone Age, mainly from settlements, but there is a lack of information about find circumstances and dating. However, there is a new

analysis at hand for the Iron Age that reveals two different kinds of human-bear culture – one under Germanic influence in which pelts were cremated along with the deceased (Late Iron Age, 9th to 14th century), and a traditional Finno-Ugric one in which the bear was venerated as a divine forefather. In the present context, the analysis of animal hairs has proven to be of essential importance, and this method of analysis should be continued for materials from Finland and beyond (see Kirkinen 2017 for Finland and Nockert 1991, 31, 36, for the extraordinary amount of animal hairs in the Migration Period master warrior's burial in mound 2 at Högom, Sweden).

To sum up, the given areas, considered mainly over the long term, from the period of hunters and gatherers until medieval or even younger times, have in common that bear remains were used as grave furnishings only during particular periods of time (see also further below). Even though this is only referred to for England in the present book, bears in entertainment (bear baiting, dancing) were, as we may assume, yet another common thread but only for younger periods of time. In this regard, bear finds from cities are worth considering as possible testimonies for dancing bears. When it comes to the longevity of actual bear hunting, substantial archaeological evidence comes from northern Sweden and Finland, contrary to England and northern Germany where bears became extinct at least partly due to human influence, if not as a result of extermination policies.

More generally, one would expect to see a dualism in the human-bear relationship; among hunters and gatherers, bears could have been considered as ancestors or guardian spirits and may have served as clan attributes (Mannermaa et al.; see also Helskog 2012), whereas among farmers or in periods with increasing social complexity these animals were symbols of power and war or could have healing effects (see here, positively, Ney on the role of bears in Old Norse literature, which also shows bears in the hands of kings). Even more, the burials with bear skins or claws reflect a period in which bears were still considered as powerful animals from which humans could benefit, whereas in the Roman Empire or under Christianity they were degraded to killing or being killed in the arena, dancing and performing acrobatics, or being baited. The somewhat surprising Teddy-bearisation is little more than 100 years old.

As to Lithuania that shall represent the Baltic area, bear remains, usually less than 0.5 % of the total amount of animal bones at given sites, have come to light in different kinds of settlements (in the following, personal communication, Giedrė Piličiauskienė). Unfortified settlements of the Subneolithic, Neolithic and Early Bronze Ages (4000–1500 BC) have yielded mixed find materials, sometimes also from much younger times. It is only by radiocarbon-dating that bones can be allocated to particular archaeological periods. In fact, there are a few well-dated sites from the Stone Age, such as Šventoji 43 (3900–3700 cal BC). Lithuanian hillforts mostly have only broad datings, with the earliest from the Late Bronze Age (*c.* 800 cal BC) and the most recent from medieval times (13th and 14th centuries), while the bones from these sites are unstratified. A few hillforts, however, are dated to the Late Bronze Age (*c.* 800–600 BC), among them two with bear remains (Garniai 1 and Kukuliškės). The most recent excavations have led to accurate datings for comparatively young sites with bear remains, e.g. Vilnius Lower (13th to 19th centuries) and Klaipėda castle (late 13th to 18th centuries).

Two more studies have a broad chronological scope, but they remain within the boundaries of the Stone Age; let us call them considerations of the middle term, as opposed to the long term, which spans over broadly understood archaeological periods (from the Stone Age to medieval times); the short term will be introduced below.

The first study deals with the role of bears among the hunter-gatherer-fishers of the East European Plain forest zone (Kashina/Khramtsova). At the outset, reference is made to the influential paper of Knut Helskog on the role of the bear, mainly in prehistoric Scandinavian rock art. Regrettably, however, as the author states, bear effigies and bear bones are very scarce finds in Scandinavia (Helskog 2012, 217; see also above). In this context, finds from Russia yield considerable potential for conducting the same kind of study, but with a broader material base that includes portable art and

petroglyphs with depictions of bears, as well as bear bones in settlement and burial contexts (10th to 3rd millennia BC).

Surprisingly, bears are almost invisible in portable art (6200–2000 BC), but other animals, particularly elks, were not (still Kashina/Khramtsova). In the case of weapons, bear figurines are more frequent, and this relates to both stone maces and axes. Finds are largely without context but some date to the 4th/3rd millennium BC. One can well imagine that warriors considered these weapons as particularly powerful. As to petroglyphs, the ones from Alta in northern Norway (see above) stand out with a substantial representation of bears, but this also relates to sites in Russia, with the oldest one dating back to *c.* 5000 BC. In the rock art, hunting may stand side by side with bears as elements of broad narrative cycles. Knowledge about bear remains in settlement contexts is so far only accessible for the narrow time span of 3500–2700 BC (Volosovo culture at the Volga-Oka interfluve). Bear remains may reflect a practical use, for instance bones as processed tools. Incisors or fangs of bears, mostly modified, were a frequent grave furnishing of the aforementioned culture, too, which again may point to the mighty bear and the power it could bestow upon humans. In sum, the brown bear definitely played an important role in the considered area but in a dual way that encompassed both spirituality and ordinary livelihood.

The second middle-term consideration is about changes in the bear-human relationship in the Danish Mesolithic and Neolithic, *c.* 9500–2400 cal BC (Klassen/Gregersen). The point of departure is the remarkable Kainsbakke settlement site in Jutland, which dates to the early 3rd millennium BC and belonged to the so-called Pitted Ware culture, which to some extent saw a return to hunting as a subsistence strategy. In the early 1980s, brown bear bones of at least ten different individuals were excavated there (by far the largest total from any Neolithic site in southern Scandinavia) in the form of different skeletal elements, including entire crania (!). The bones also display a special treatment when compared to those of other animals. All of the bones were found in one single pit – A 47 –, which was the result of deliberate single depositions. Do we see here a case of Neolithic bear ceremonialism? The pit, however, also yielded bones from other animals, such as elk and the truly exotic Dalmatian pelican. Earlier on, the bear appears to have been a rare but hunted animal, there being no or limited evidence for bear rituals, whereas the elk might have been more dominant and an object of ceremonialism, too (see also Piludu).

Just as worthy as archaeological studies of the long and middle term are considerations that focus on a narrower time span in either the Stone, Bronze or Iron Ages, or in medieval times. In the present book, this is particularly accentuated for the Iron Age and medieval times but there is also one contribution to that effect for the Stone Age (besides the aforementioned one from Armstrong Oma/Kristoffersen, on the roughly 12,000-years-old polar bear from Finnøy in southwestern Norway).

This contribution (Lindström) highlights the Neolithic Pitted Ware culture's ursine remains and depictions in southern Sweden (*c.* 3200–2300 BC). As is argued by the author, due to the low number of finds – only eleven, which mostly represent teeth and limb bones – any interpretation must be made with caution. Remarkably, some remains received special treatment, such as being placed in a clay pot or situated adjacent to hearths/cooking pits, whereas zoomorphic figurines cannot be ascribed to the bear, due to a lack of features that would allow a reliable identification. So, a site-by-site analysis is needed, as opposed to a broad generalisation.

As we have seen, studies that cover the long, middle and short term are insightful for the reconstruction of the past. In particular, it is the long term, as has been argued by Fernand Braudel, that shows fundamental changes in mentality, as expressed, for example, by burial customs. One has to be aware, however, that considerations of the long term in archaeology are faced with millennia whereas, in historical science, where that concept was developed, it would just be centuries – and not many of these.

The bear in the church

Among the surprising discoveries during the compilation of this book are substantial testimonies for bear skins placed in front of church altars in northern Europe, as is mentioned by Olaus Magnus in the midst of the 16th century. According to him, such skins were meant to keep the priest's feet warm in the cold church (thanks to Elisabeth Iregren for directing my attention to this).

However, written records to that effect are centuries older for Norway where bear skins have been preserved up to the present day and scrutinised (radiocarbon-dating and isotope analysis) with surprising results (Jahnsen). In addition, paws and claws were found beneath church pavements, interpreted as a kind of a deposition, placed there in the hope of recharging their assumed powers, such as for healing humans and domestic animals (see also Mansrud).

As regards Finland, we only have rather recent written testimonies (Korhonen). Again, the bear skins were meant to serve the priest in the aforementioned manner, but quite possibly the bride and the groom also stood on the skin, since this was supposed to strengthen the wedding vow. When it comes to the day of the bear hunt or the day on which the skin was donated to the church, there may have been connections with the name-days of Christian saints who were believed to protect domestic animals and to help against bears (e.g. St George and St Margaret).

The bear in the grave

As mentioned, the most remarkable burial evidence are the Sámi bear graves found in northern Norway and Sweden that were reserved for the animals themselves, with a dating that covers most of the past two millennia, at least for Norway, though most of the burials are post-1000, if not post-1500 (Iregen and Sommerseth; in the following: Iregren). A Sámi bear grave ideally consists of all the bones (unburnt) from one killed and consumed brown bear. Among the bones, the skull, the lower jaws, and the shoulder blades bear no damage from the carving, fileting, cooking, and consumption of the bear. All suitable bones were, however, split for marrow extraction (in contradiction to written sources of the 18th century according to which bones had to be left unbroken; see Rydving). In the burial, the correct anatomical order of the animal was reconstructed. Grave furnishings are very rare and include lead bullets from rather recent times. It remains an open question whether hearths found close to some graves reflect a ceremonial at the burial site. There are also potential source-critical issues, for example as to bone preservation, which is much worse in northern Sweden than in northern Norway. And there are other questions – were there also *pars pro toto* bear burials, and do the many rather recent graves reflect a period of stress caused by Christianisation?

The Sámi bear graves from Norway consist of 30 find spots with the remains of 44 bears placed in natural surroundings, that is, in caves or below boulders and screes, which have come to light by modern construction work (in the following: Sommerseth). Due to the placement, preservation conditions and disturbances of the burials, one cannot be certain how complete the bear skeletons once were – according to written sources, the bear bones had to be treated with care, following the bear ceremonial. Another open question is whether sites with at least two bears should not be seen as offering places (see Spangen et al.). Chronological allocation rests on radiocarbon-dating with three finds older than AD 1000 and the majority from the period 1000–1500. Apart from one case, there were no other objects added to the burials. Grave sites may have been considered open passages to various worlds, inhabited by gods and spirits, and hunters had to show proper reverence to the bear, which made them successful in hunting and in life more generally (Sámi *lihkku*: happiness and property).

A most astonishing set of data has been gathered in the Swedish database "The bear in the grave". Currently, it includes as many as 407 burials (!) with bear remains from a (proto-) Swedish population with focal areas in Uppland and Södermanland in central-eastern Sweden (Lindholm/Ljungkvist). The number of burials has increased again after a re-study of the material from Gotland that now amounts to 147 findings (among the 407) – notably for an area in which bears did not exist (Jordahl et al.)! This even includes irrefutable proof for skins in burials. However, there is one difference to be aware of – while the vast majority of burials with bear claws on the Swedish mainland represent cremation burials, in Gotland these make up only two thirds. As analysis shows, the majority of the Swedish graves date back to the Migration Period, but the Early Vendel Age also plays a considerable role.

An interesting case study for Late Iron Age burials (560/570–1050) in mid-Swedish Uppland comes to the result that, among 72 well-recorded burials, remains of domestic animals are recorded in no less than 71 (!), whereas the bear is represented in only four finds (Strehlau). With the exception of wild birds, however, the bear remains the most represented wild animal to occur in graves.

Furthermore, there is only a handful of finds from Öland, which cover most of the 1st millennium AD (personal communication, J. Ljungkvist). Among them is the impressive and richly furnished cremation grave of a woman in Klinta that dates to the Early Viking Period (Oehrl). This displays a strong connection to bears by way of claws and figures, the latter of which are found at the top of an iron staff, a find category that has seen different interpretations – was it a wise woman with a staff, as is testified in Old Norse literature (see e.g. Ljungkvist 2011, 261, with a reference to Price 2002, 112–116)?

When seen against a northern European background, Norway is also strongly represented, more substantially than hitherto thought, with an overall number of *c.* 200 burials, mainly cremations, which to a large degree date to the (late?) Roman and Migration Periods. One hundred and thirty burials are known from the southern and western part of the country (Mansrud), whereas the material from southwestern Norwegian Rogaland – one inhumation and *c.* 50 cremation graves – is currently being investigated in a Ph.D. thesis (Klokkervoll in prep.). In turn, central Norwegian Trøndelag only yields little more than a dozen finds to that effect (Henriksen 2001), and the north of the country even less, but these are quite remarkable cases (Grimm).

To be as general as possible for Sweden and Norway: The aforementioned graves are mostly cremations from the middle of the 1st millennium AD, they are surprisingly numerous, the interred represent adult persons (children are rarely found) belonging to both genders, the grave furnishings rank from rather poor to abundantly wealthy, and the main bulk yields only one or a few claws. As has been argued for south and west Norway, the deceased ones represent farmers, herders and hunters rather than chiefs, shamans and warriors (Mansrud).

Most remarkably, four Migration Period inhumation burials – three men ("master warriors": mound 2 in Högom [Sweden], grave V in Snartemo, and another one in Evebø [both Norway]) and one woman ("petty queen": Krosshaug in Norway) – belong to the richest of their time, and this is also true for a 4th-century cremation grave (Haram, Norway). All these finds have yielded actual skin remains, and thus this kind of burial rite had a distinct, uppermost class affiliation, but the majority of burials with either skins or the much more numerous claws had no such status.

In contrast to the many testimonies for Sweden and Norway, Denmark yields only *c.* 35 graves, male and female, from rich to poor, with bear claws in the period from the 1st century BC to *c.* AD 400 (see more on this below; compare Henriksen 2009, vol. 1, supplement 12). On the whole, the burials in Denmark are thus older than the ones in Norway and Sweden.

When it comes to Åland, 30 cremation burials, notably of Late Iron Age date (550–1100), have yielded bear claws (Gustavsson/Ljungkvist). Most graves represent male persons, some with unusual furnishings, such as Arabic coins. This island is also known for more or less contemporary and

somewhat enigmatic clay paws in graves, seen by some as representations of bear paws, but other animals have been suggested, too (most recently Ilves 2019). Finally, in the case of the Finnish mainland, and as already mentioned, only a few burials in the period from the 9th to the 14th century have yielded hair remains as left-overs of bear skins, but ongoing analysis may increase their number (Mannermaa et al.).

It is only now, in this book, that all of the burials with bear claws (skins) in northern Europe have been compiled in their entirety (*c.* 650 finds). However, the ongoing study of claws from southwestern Norwegian Rogaland (listed among the 650) will add more detail in the future. Following the publication of this work a re-evaluation of the overall body of burials can be started by tackling questions concerning the average number of claws in burials and the chronology. Was the climax of this burial rite in Norway reached in the Migration Period, as was the case with Sweden?

The abundant material, mainly from Sweden, has to be embedded in a discussion about the bear skin trade and, potentially, the overhunting of bears, too (Lindholm/Ljungkvist). In an account from the late 800s, the northern Norwegian trader (chieftain) Ottar mentions skins of different animals (including bear) obtained as taxes paid by the Sámi among his commodities (see for instance Bately/Englert 2007). Novgorod in Russia used to be a major player in the fur trade, but this occured more in the period post-1000 and with an emphasis on small, furry animals, such as squirrel, marten and sable, whereas bears may have been of secondary importance (Zinoviev).

A larger number of burials with bear claws come from the early medieval period (5th to 7th centuries) in the east of England (O'Regan). Four out of eight studied cemeteries have yielded bear claws: Sancton I, Spong Hill, Elsham Wold, and Cleatham, but further information is only available for the latter two. The altogether 16 burials with differences in age, sex, and social level suggest a variety of statuses for the individuals buried with bear phalanges. The finds from Sancton I and Spong Hill will be considered in a forthcoming paper (Squires et al., in print).

And now a brief look at some selected, older, prehistoric burials with bear remains. As regards England, the most remarkable burial in that area dates to the Early Bronze Age (O'Regan). In the cist from Whitehorse Hill, Dartmoor (Devon), ashes were found wrapped in a piece of a bear fur (!), which measured 56 x 39 cm and originates from parts of the rear portion. The buried person was 15–25 years of age, with no possibility for gender determination, and the grave was richly furnished.

As to the hunter-gatherer-fishers of the East European Plain forest zone, one is amazed at the number of 74 inhumation burials with bear incisors, fangs and a phalange (Kashina/Khramtsova). Likewise impressive is the site Oleni Ostrov by Lake Onega in Karelia (Russia), inasmuch as it has yielded 128 bear canines, some of which belonged to necklaces, found in 48 of the 170 Mesolithic graves (Mannermaa et al.).

Let us now have yet another look at burials with (assumed) bear remains, but this time in the period post-1000. In a recent excavation of the Kremenye burial ground in the Moscow region (Russia), a 12th-century cremation burial unexpectedly yielded bear claws and the remains of skin, fur and/or wool, following soil analysis (Syrovatko et al.). This burial is – as yet – the only one of its kind in the area in question as regards burial rite, dating, construction, number of finds and context. Why is that so? Would further soil analysis lead to the discovery of more bear remains in graves?

When it comes to Lithuania, there are external written sources about the burials of the last pagan Dukes of the area – (most probably) Gediminas (in 1341) and two of his sons, Algirdas (1377) and Kęstutis (1382; personal communication, Giedrė Piličiauskienė). The sources date to the 14th and 15th centuries and go back to writers from the Teutonic Order and Poland. According to these, Gediminas was buried with a horse, Algirdas with 18 horses and Kęstutis with horses, hunting dogs and birds of prey. No bear remains are mentioned for these burials. This latter observation is of importance since, in scholarly literature, bear claws were repeatedly assigned to the aforementioned burials, but this is owing to a misunderstanding of younger written sources with limited reliability (post-1500).

As regards central Europe and its prehistory, one important but small group of burials which included bear claws or teeth, in worked or unworked shape, has been analysed with an emphasis on the Hallstatt period (*c.* 800–450 BC) of Bavaria in southern Germany (Augstein). Interpretation ranges from the bear as a resource (meat, fur) to bear remains as status indicators or trophies. Assessment, however, is difficult because of the low number of burials. The well-known Late Hallstatt centre of power in Heuneburg has yielded a voluminous animal bone material, among which nine bears are represented. Remarkably, in the nearby Hohmichele burial ground there is evidence for a bear skin (!) in a Late Hallstatt burial (the central burial in tumulus 17) but this is awaiting full publication. One more grave find deserves a mention. The famous chieftain's grave in Hochdorf, southwestern Germany, *c.* 2500 years old, has not yielded any bear remains but there are other references to hunting among the furnishings (Hansen 2013).

In addition, there are *c.* 100 younger graves in central Europe which belong to two sub-groups, based on dating but also on burial type:

- the first one (*c.* 40 finds) dates to the period from *c.* 100 BC to AD 100 and comprises cremation burials with bear claws, which often represent men of wealth (Schönfelder 1994; Droberjar/Peška 2002, 445–450; Beermann 2016);
- the second one dates to the middle of the 1st millennium AD and includes some cremations with bear claws in the area that stretches from the northern part of the continent to Frankfurt (Main), Germany, in the south. These include men or women with differences in social status. In addition, 40 contemporaneous inhumations from southwestern Germany have yielded perforated bear teeth, and sometimes claws, in burials of middle-class women or children who wore the objects on long straps at the hip or thigh (e.g. Arends 1978; Wamers 2015; Beermann 2016).

Two 1st-millennium-AD central European burials deserve a particular mention:

- the first one is the Mušov burial, Břeslav, Moravia (Czech Republic); there a petty king and high ranking warriors were interred in a grave chamber with a length of almost 6 m (!) at the end of the 2nd century; a bear claw was also found (Droberjar/Peška 2002, 455–459);
- the second one is a bi-ritual child grave from Frankfurt (Main) in central Germany, dated to the early 8th century; in the present context, the cremation burial with eight bear claws deserves attention. As has been argued, this child was burnt on a bear skin in northern European fashion (see further below on this). If one is to follow this suggestion, the Frankfurt burial may be seen as a reflection of an old, "classical" burial custom of the north.

When it comes to the interpretation of the bear claws and the few actual skins in the burials, discussion is ongoing. It is a fact that, among the aforementioned *c.* 650 burials in northern Europe, there are only a little more than a dozen, mostly inhumations, that have yielded actual skin remains. As one may assume, the deceased were once placed on these skins (Grimm). In one case, however (mound 2 from Högom in Sweden), a skin may have served as cover of the deceased (Nockert 1991, 31, 36).

In this respect, the actual preservation conditions have to be taken into account, too. In the case of inhumation, bear claws and skins continue to exist only in exceptional conditions, whereas in the case of cremation, skin and also claws were largely destroyed on the funeral pyre (personal communication, Ulrich Schmölcke). In the case of cremation, two variants have to be distinguished – firstly, funeral pyres were directly covered by mounds, as in central Sweden, which would allow to identify the location of the claws in the burial (information to that effect, however, is unavailable for Sweden; personal communication, John Ljungkvist), secondly, bear remains were gathered from the burnt-down funeral pyre and (a) placed into urns and buried at some other spot, or (b) poured together with loose ashes into a flat burial, again detached from the actual pyre site.

All of the claws in the burials necessitated the killing of bears, perhaps as a heroic deed (see above), but there is no way to positively confirm that each single claw, or even a few of the claws, in burials were attached to skins that served as a rug for the deceased on the funeral pyre (affirmative, amongst others, Wamers 2015 and Beermann 2016 for all graves that have only yielded bear claws).

In contrast, alternative interpretations can be put forward. One thing is for sure – drilled claws, which apart from the use as dress ornaments may hint at amulets, are very rare. In this context, the well-known cemetery of Møllegårdsmarken (southeastern Funen) makes an interesting case with ten burials that date to the first centuries AD. Five graves have yielded single claws with drillings whereas from five more, only undrilled claws are known (Henriksen 2009, vol. 1, 216, 218, bilag 12). Furthermore, one drilled claw had an iron suspension for fastening onto clothing (?), and in three more cases beads were found, which suggests the existence of some sort of necklace.

When it comes to undrilled claws, they might have been carried attached to clothing or in organic containers. A grave in Sletten in southwestern Norway has yielded fragments of a woven belt with bronze fittings and an attached animal skin and a bear claw (Mansrud; Grimm on that burial). Furthermore, grave IV in Rösta, Ås parish in Jämtland, middle Sweden, which dates to the 10th century AD, contained two undrilled claws in a bag, placed by the waist of the buried person (Jordahl et al.).

The fittings on the claw in the Sletten grave and the placement of the two claws in the Rösta burial suggest that they may have been used as amulets, even in an undrilled state, and not only as single objects (see Ney on rune-inscribed claws in poetry that bestowed wisdom; these, however, remain to be found). Furthermore, one to five claws may reflect "the power of the paw" that is associated with their addition to the burial. Such paws were, amongst other things, used for alleviating the pain of childbirth, as is documented up until the 20th century in inner western Norway (see Böldl; Jahnsen; Mansrud on the use of different bear parts connected to healing, and Hurka on the same thing for antiquity). Finally, for burials with a minimum amount of six claws, thus beyond the number of claws for a single paw, one may in fact suggest the actual use of a bear skin in a burial context, and this would include the aforementioned child burial in Frankfurt.

Finally: Farewell to the bear as a fallen king and also to bear ceremonialism, understood as the only one of its kind?

In the period under scrutiny in this book, northern Europe, in a narrow sense (Scandinavia, including Finland), has seen three different kinds of populations on linguistic grounds – north Germanic and Finno-Ugric (Sámi and Finnish/Karelian) – each with its own human-bear relationship, and there are great differences in the evidential value of bear ceremonialism.

But before we begin, there is a need to return to the aforementioned milestone of research, the work of I. Hallowell (1926), who has purported that there was one kind of bear ceremonialism for the entire northern hemisphere, but with variations. As has been criticised, the study draws upon an uncritical gathering of materials for a very broad region and is based only on secondary sources and not on actual fieldwork that would provide insight into the actual cultures and their languages (in the following: Rydving).

Differences in bear ceremonialism have been underlined in a limitative approach (as opposed to a comparative macro-analysis) for only two cultures, namely, the Sámi and the Khanty, which represent the western and easternmost speakers of the Finno-Ugric language (each with different dialects) and for which only the southern parts were considered, owing to the source situation. Notably, there are not only differences in the ceremonials between the Sámi and Khanty but also among the groups themselves, who lived in vast areas (!). And, as a matter of fact, the bear ceremonial is still alive among the Khanty, whereas the one of the Sámi is long gone, due to the growing influence of Christianity.

For the southern Sámi, the bear ceremonials had these three elements – the hunting, the bear feast, and the bear grave (Rydving; see above on those graves), whereas in the case of the southern Khanty it consisted of the hunt, the bear festival (with no actual feasting) and remembrance rituals (on the sixth, nineteenth and thirty-eighth day after the festival). In turn, the Finns and Karelians carried out their version of bear ceremonialism in three steps – the hunt itself, the bear feast, and the bear skull ritual (see Piludu and also Keinänen). As a matter of fact, there are still local traditions attached to certain trees (see above).

When it comes to the speakers of north Germanic, there are only weak indications for a bear ceremonialism, if there was one at all. The first clue to that effect and from times immemorial is the taboo word for bear, "the brown one", as a potential element of a ceremony (see above), whereas in the case of the Viking Age Frösö site (Jämtland, northern Sweden), bear remains may have been placed at the foot of a birch tree, whose stump came to lie under the choir of a medieval stone church (Magnell). Furthermore, a dark layer with fire-cracked stones and bones was found near the stump, perhaps the remains of food preparation or even a ritual meal? Bones of elk and domestic animals came to light, too, whereby the site's potential meaning as a "bear sanctuary" is devalued. Remarkably, the place name itself, "the island of the god Freyr", is testimony for pre-Christian religion and, owing to an 11th-century runic inscription, the presence of a local site of power must be considered. In any case, the question remains whether all this was done by the sedentary "proto-Swedish" population in order to express gratitude for a successful hunt. Is there even a connection with bear skins donated to the church by hunters after the successful despatchings of such animals? (Jahnsen; Korhonen).

If we disregard the north Germanic speakers, we are left with the ceremonialism of the Finns/Karelians and the Sámi, which differs in details, and this relates even more to the Khanty from Siberia. It thus remains an open question, as above with the bear's son tale and bear festival, whether all these facets go back to one common source from which they spread and changed over time or whether there were independent developments based on the universal notion of the bear as powerful animal (see also Hirsch).

In the present context, it is insightful to relate to bear-human interactions in North American indigenous cultures, with a focus on the so-called Mound Builders in the present-day eastern United States of America: the Adena, Hopewell, and Mississipian cultures (800 BC to AD 1600) but also including including younger populations (Hull). The attitude towards bears is aptly captured in this saying of a tribe from Arizona: "Bears are like people, except they cannot make fire". As a matter of fact, bear claws, teeth, paws, skins as well as bear headdresses occur in various ritual contexts; the strength of the bear is transmitted to humans, for healing and shamanism, but also for war and hunting. Bear ceremonialism had different facets; before the actual hunt, bear dances were meant to guarantee success in hunting, with the medicine man and the other participants dressed in bear skins and wearing bear heads. After the hunt, the bear skull gained particular importance, which was expressed, for instance, by placing it on the branch of a tree in the forest.

We shall also return to the second milestone of research, the work by the French historian M. Pastoureau. According to him, the bear may have experienced a fall from the position of king to one of disgrace at the expense of exotic lions with the introduction of Christianity in northern Europe (see above). However, there seems to be no firm proof that the bear was a venerated animal with particular importance in religion, at least as far as the northern Germanic-speaking groups were concerned. For the Sámi and the Finns/Karelians, Christianity gained ground only much later, and the bear continued to play an important role in ceremonialism.

The change from the bear to the lion in heraldry or rather in political iconography, which was assumed by M. Pastoureau to be a part of the process of bear-dethroning, would require an in depth-analysis for northern Europe. It is a fact, for Sweden and Finland, that the bear is a frequently found

heraldic motif (Ahrland/Gustavsson). However, the Swedish House of Folkung, founded in the 12th century, from which came different bishops, jarls and kings, has a lion as the heraldic animal.

As regards the role of the bear as the "(golden) king of the forest", it seems that it is only in the Finnish/Karelian material that this is directly hinted at as a "title of honour" (Piludu; Pentikäinen 2007; see also Veselova on Russian fairy tales). Among the north Germanic speakers and the Sámi groups, this can only be speculation, on the grounds that the bear was the biggest and strongest animal in the wild. Remarkably, in German medieval literature, dragons, lions and foxes occur more regularly than bears, and the latter seem to be absent from the forests in the literature. However, a close reading shows that different texts seem to allude to the bear's earlier role in the context of "royal dignity" or "king among the animals" (Obermaier). Even more, in the *Vita Galli* (8th century), saint and bear come to have a peaceful existence, "animal peace", foreshadowing the Kingdom of God (Isaiah 11:6–8; see also Lindén).

In the present book, owing to its specific agenda, there has been no chance for a systematic discussion of the precious works and theses of I. Hallowell and M. Pastoureau. However, a wealth of material has now been made available for conducting this kind of research, which again can only be handled in an interdisciplinary approach.

Epilogue: Bears in the sky

Among the preserved globes from antiquity there is one from Mainz (brass, 150–220). This object has a diameter of only 11 cm but it captures an entire worldview. Names for the constellations in Europe mainly go back to Classical Antiquity or, more precisely, ancient Greece, with its star catalogues and stars linked to mythology. "The Great Bear" and "The Little Bear" were seen in a circumpolar position; they never set (Künzl; see also Frank; Horn; Hurka). There is not that much knowledge about how the Germanic people named the stars in the sky. The Great Bear and The Little Bear were unknown; instead a wain was seen in both constellations (as before in Mesopotamia).

Acknowledgements

The author would like to thank Rosie Bonté, Daniel Groß, Gundula Lidke, Robert Nedoma and Andreas Zedrosser for their help with the text and Sharon Shellock for language proof-reading.

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Bears in biology (Europe)



Brown bears in a playful fight in Katami National Park, Alaska, USA (see Grimm et al., Bears – fact or fiction; photo Th. Sbampato, image used with permission of the photographer).

Conservation status and distribution of the brown bear in Europe

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Keywords: Europe, brown bear, Ursus arctos*, population size, conservation*

Abstract: Despite millennia of persecution, brown bears have made a remarkable comeback in Europe due to a shift in the management paradigm towards more conservation-oriented management in the 20th century. Today, the brown bear occurs in 22 countries in Europe, and the overall population size is estimated at approximately 17,000–18,000 individuals (not including Russia). Brown bears can be clustered into ten populations in Europe: Scandinavian, Karelian, Baltic, Carpathian, Dinaric–Pindos, Eastern Balkan, Alpine, Central Apennine, Cantabrian, and Pyrenean. Several of these populations are large and are sustainably managed, also by hunting (e.g. in Scandinavia and in the Carpathian mountain range). In these populations it is important to ensure that hunting quotas are kept within the limits of sustainability. However, several brown bear populations in Europe are still small and isolated, and special attention must be paid to their long-term viability in terms of the number of reproducing individuals and population genetics (e.g. the Central Apennine, Cantabrian, and Pyrenean populations). Effective mitigation measures to keep depredation rates low are crucial for conservation in Europe, as is public education and awareness of brown bears. Coexistence of humans and brown bears is fully possible, even in the human-dominated landscapes of Europe.

Introduction

The brown bear (*Ursus arctos*) is the most widespread bear, with a Holarctic distribution in Europe, Asia, and North America (Swenson et al. 2000; Zedrosser et al. 2001). The species is highly adaptable, and lives in habitats ranging from northern Arctic tundra to dry desert (Swenson et al. 2020). The subspecies generally occurring throughout Europe is *Ursus arctos arctos*, and compared to their North American cousins, for example the so-called grizzly bear (*Ursus arctos horribilis*), their claws are a bit shorter and less curved, enabling European brown bears to climb trees very well. The fur colour can vary considerably in Europe, and some individuals may seem light or dark from different angles, due to the variegated guard hairs (Swenson et al. 2000). Adult males are larger and heavier than females on average; generally, males weigh 140–320 kg, and females weigh 100–200 kg (Zedrosser et al. 2006; 2011; Swenson et al. 2007; 2020). All European populations are inland populations and do not reach the extreme body sizes found in coastal population with access to protein- and lipid-rich spawning Pacific salmon (*Oncorhynchus* spp.), as in Alaska and eastern Siberia. As a matter of fact, brown bears in Europe likely never have eaten salmon (*Salmo salar*).

People and large carnivores (i.e. brown bear, grey wolf [*Canis lupus*], Eurasian lynx [*Lynx lynx*], wolverine [*Gulo gulo*]) have been in conflict throughout their common history (Woodroffe 2000; Linnell et al. 2001), and carnivores were not killed primarily for consumption, but to prevent them

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 51–62 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134324

from killing livestock, other wildlife, or people (Swenson et al. 2000; Zedrosser et al. 2011). Emperor Charlemagne was the first to establish a dedicated large carnivore hunting corps around AD 800 (Boitani 1995), but it took many centuries to gradually eliminate bears and other large carnivores from western Europe (Frank/Woodroffe 2001). These efforts were often encouraged with bounties paid by the state and/or local authorities for the killing of bears (Swenson et al. 2000). This was effective, because bears have a low reproductive rate and they are sensitive to high harvest rates (Swenson et al. 2000). Also, climatic variation and habitat loss may have played a role in the extinction of large carnivores. Albrecht et al. (2017) have suggested that increasing winter temperatures likely have contributed substantially to the Holocene decline of the brown bear, both directly by reducing the species' reproductive rate and indirectly by facilitating human land use. The first local extinctions occurred during the Mid-Holocene warming period (*c.* 7,000–5,000 years ago), but the rise of the Roman Empire 2,000 years ago marked the onset of large-scale extinctions, followed by increasingly rapid range loss and population fragmentation. These findings strongly support the hypothesis that complex interactions between climate and humans may have accelerated megafaunal extinctions (Albrecht et al. 2017).

A shift in the management paradigm towards more conservation-oriented management has occurred in the 20th century, and today many large carnivore populations are again on the increase in North America and Europe (e.g. Breitenmoser 1998; Servheen et al. 1999; Boitani 2000; Swenson et al. 2000; Woodroffe 2000; Linnell et al. 2001; Schwartz et al. 2006; Zedrosser et al. 2011). The present conservation challenges regarding large carnivores include their large area requirements and predatory behaviour (Nowell/Jackson 1996; Linnell et al. 2001), as well as their comparatively low population densities and slow life histories (Zedrosser et al. 2011). Especially small populations of large carnivores are very vulnerable to stochastic events and the loss of key individuals (Linnell et al. 2005; Zedrosser et al. 2011). Despite these somewhat pessimistic forecasts, large carnivores, including the brown bear, are making a comeback in Europe. Chapron et al. (2014) have shown that roughly one-third of mainland Europe hosts at least one large carnivore species, with stable or increasing abundance in most cases in 21st-century records. The reasons for this overall conservation success include protective legislation, supportive public opinion, and a variety of practices making coexistence between large carnivores and people possible (Chapron et al. 2014). What is so remarkable about this comeback of large carnivores in Europe is that it occurs in a man-made and human-dominated landscape, not in a wilderness area. This clearly documents that wilderness is not required, that large carnivores – including the brown bear– can adapt to the proximity of humans and human-dominated landscapes, and most importantly, that carnivores and humans can share the same landscape and coexist in Europe (Chapron et al. 2014; López-Bao et al. 2015).

Brown bears originally occurred throughout Europe (except on the largest islands such as Iceland, Gotland, Corsica, and Sardinia; cf. Swenson et al. 2000; Zedrosser et al. 2001). Today's distribution of brown bears in Europe can be defined by populations, i.e. all bears in an area that are genetically isolated, totally or substantially, from other bear populations (Swenson et al. 2000; Zedrosser et al. 2001). Overall, there are 17,000–18,000 bears spread across ten populations and 22 countries in Europe (excluding Russia) today (Kaczensky et al. 2013). The largest European populations (>1,500 individuals) are in the Carpathian Mountains, Scandinavia (see Schneider et al., this volume), Karelia, and in the Dinaric-Pindos mountain range (Fig. 1; Table 1; www.lcie.org/Large-carnivores/Brown-bear; cf. Swenson et al. 2000; Zedrosser et al. 2001; Chapron et al. 2014). These populations are generally hunted. Medium-sized populations (300–1,000) can be found in the Cantabrian Mountains, in the eastern Balkan, and in the Baltic area; very small (<100) and usually endangered populations can be found in the Alps, in the Pyrenees, and in the central Apennine Mountains (Fig. 1; Table 1; data from www.lcie.org/Large-carnivores/Brown-bear; cf. Swenson et al. 2000; Zedrosser et al. 2001; Chapron et al. 2014). Generally, these medium and small-sized populations are not hunted.

Alpine population

This population is located in the Alpine mountain range of Italy, Switzerland, Austria and Slovenia (Fig. 1; Table 1). Its core consists of a few brown bears in northern central Italy, originally a naturally occurring but very small population that was augmented by the release of bears from Slovenia (Swenson et al. 2000; Zedrosser et al. 2001; De Barba et al. 2010). Bears were also reintroduced into central Austria in the 1990s, again with individuals captured in Slovenia. After an initially positive development and at least 30 documented reproductions, the population in Austria has disappeared, likely due to illegal killings (Rauer 2004; Kaczensky et al. 2011). The population augmentation in Italy was successful, however, and the status of the Alpine bear population is now considered stable to increasing, and some bears have dispersed into the neighbouring countries of Switzerland, Austria, and even Germany (Kazensky et al. 2011). Unfortunately, several of these dispersers have shown problematic behaviour, i.e. some were human-habituated (i.e. not afraid of humans) and have caused damages to livestock, and were removed from the wild by the responsible authorities. Illegal killings may hamper the long-term development of the Alpine population, as can be documented by the poaching of a dispersing individual in the border area of Slovenia and Austria as well as the failed bear reintroduction in central Austria (Kaczensky et al. 2011). On the positive side, the Alpine population is starting to reconnect with the bear population in Slovenia (Kaczensky et al. 2013), especially in the triangle area of northern Italy/Slovenia/southern Austria, which is crucial for the long-term survival of this population (Jerina/Adamic 2008; Peters et al. 2015).

Baltic population

Brown bears in Estonia and Latvia are considered part of the Baltic population, which is continuous with bears in Russia and Belarus (Fig. 1; Table 1). The main distribution area in the Baltic countries is in Estonia, where bears generally are found all over the mainland; however, reproducing females are missing in the southernmost part of the country (Kaczensky et al. 2013). Bear occurrences in neighbouring Latvia are rare, however, but are most common in the eastern and northern part of the country along the Estonian and Russian border. There is no evidence of bear breeding in the territory of Latvia (Kaczensky et al. 2013). The Baltic bears are genetically connected with the Karelian and even the Scandinavian population via the very large and stable bear populations in Russia (Kopatz et al. 2012; 2014; Schregel et al. 2012; Kaczensky et al. 2013). Bears are hunted in Estonia, and the overall goal is to keep numbers at a stable level. In comparison, bears in neighbouring Latvia are strictly protected, and the management goal is to increase the number of bears.

Cantabrian population

Brown bears in the Cantabrian Mountains of northwestern Spain occur in two small, isolated, and endangered populations: one in the west (in the autonomous regions of Asturias and Castilla y León, but also in Galicia) and a smaller one in the east (mainly in the region of Castilla y León, but also in Cantabria and Asturias; cf. Palomero et al. 2007; Fig. 1; Table 1). The populations are separated by *c.* 50 km, however, the habitat is mainly unsuitable and also is intersected by a high-speed railway and motorway. The western segment has shown an obvious increase (from three females with cubs of the year detected in 1994 to 25 in 2010), whereas the smaller eastern segment appears to be stable or only slightly increasing. The brown bear is a strictly protected species in Spain, and there are four recovery plans (one from each autonomous region) and a National Action Plan coordinated by the Ministry of the Environment (Estrategia Nacional para la Conservación del Oso). The recovery plans and the National Plan have no quantitative population goals, but rather aim to recover the population as much as possible. The recovery plans delineate the critical areas, which are particularly protected.

They usually include the best forests and the areas with concentrations of winter dens (Kaczensky et al. 2013). In general, brown bears in the Cantabrian Mountains are recovering, but the isolation of the two population segments jeopardises this recovery. Conservation priorities include promoting recovery of range previously occupied by breeding females and increasing contact between the populations (Kaczensky et al. 2013).

Pyrenean population

The Pyrenean bear population occurs in Spain, France, and Andorra (Fig. 1; Table 1). It is the result of an augmentation of a very small and local occurrence of bears with bears captured in Slovenia in 2006. This population has been totally isolated from other bears for over a century, and there are no possibilities of reestablishing connectivity in the short term (Kaczensky et al. 2013; Piedallu et al. 2019). In addition, the western and central cores of this very small population are spatially separated. In 2011, the minimum number of detected individuals was 22, based on genetic monitoring, camera traps, and opportunistic observations. Most of the individuals identified are both located on the Spanish and French side of the Pyrenean range (Kaczensky et al. 2013). There is a formal cooperation agreement on brown bear management among the governments of Spain, France, and Andorra. In addition, there are informal cooperation activities between the Spanish autonomous regions and France in order to use common monitoring and genetic methods (Kaczensky et al. 2013). The main conservation issues in this population are the acceptance of the reintroduced bears and losses mainly due to poaching (Kaczensky et al. 2013).

Carpathian population

The Carpathian population includes the brown bears in Romania, Poland, Slovakia, Ukraine, and northern Serbia (Fig. 1; Table 1); this is the largest brown bear population in Europe outside of Russia (Swenson et al. 2000; Zedrosser et al. 2001; Fedorca et al. 2019). It increased rapidly in the second part of the last century and hunting is allowed, with the exceptions of Serbia and Poland, where bears are protected. Most of the bears in this population live in Romania (*c.* 6,000), followed by Slovakia (*c.* 1,000), whereas Poland has relatively few bears (*c.* 80), and northern Serbia has very few (*c.* 6; cf. Kaczensky et al. 2013). There are some questions concerning internal connectivity within the Carpathian population, due to a lack of knowledge about the situation within Ukraine and the developments of bear distribution in eastern Slovakia (Kaczensky et al. 2013). Based on genetic data, Fedorca et al. (2019) showed that there is one large and continuous bear population across the Carpathians, which suggests that there still is sufficient suitable bear habitat to allow movement of individuals. However, results at a finer scale show some indications that highway infrastructure development may threaten to fragment regions with brown bear occurrence (Fedorca et al. 2019). In general, brown bears thrive in this large and stable population, however, attention needs to be paid to population connectivity (Ziolkowska et al. 2016; Barton et al. 2019).

Central Apennine population

This population is located in Abruzzo National Park and the surrounding area in the Apennine Mountains in central Italy (Fig. 1; Table 1; cf. Swenson et al. 2000; Zedrosser et al. 2001). Despite its full protection, this bear population seems to be stagnant at the best, despite regular reproduction events (1–7 females with cubs have been counted annually from 2006 to 2011; Ciucci/Boitani 2008; Kaczensky et al. 2013). It exists within a densely human populated area, and there are potential conflicts between bear conservation and human development and recreation activities, as also indicated by several cases of poisoning of bears in protected areas (Swenson et al. 2000; Kaczensky et al. 2013; Tosoni et al. 2017). The latest estimates suggest a relatively small population of around 50 bears (Gervasi et al. 2012; Gervasi/Ciucci 2018). The population has been totally isolated for

over a century and there is no possibility of reestablishing unassisted connectivity in the short term. In the long run, this population is under severe risk of extinction (Gervasi/Ciucci 2018). Modelling suggests that efforts aimed at increasing the general food availability likely have minimal effect on population viability and extinction risk, whereas measures to decrease adult female mortality (i.e. the reproducing segment of the population) provide the best chance for the long-term survival of this critically endangered bear population (Gervasi/Ciucci 2018).

Dinaric-Pindos population

This is one of the largest European bear populations, stretching from Slovenia in the north to Albania and northwestern Greece in the south (Fig. 1; Table 1). The total number of bears in the Dinaric-Pindos area is almost 4,000 (Table 1). Especially the populations in Slovenia and Croatia are very large and viable and are also hunted, whereas the bears living in the other countries are protected. The annual harvest rate of brown bears in Slovenia is 20 % and one of the highest harvest rates reported for brown bears worldwide. Such an exceptionally high harvest rate is only possible due to the influx of especially young adult males from neighbouring Croatia in the south (Krofel et al. 2012). The suitable bear habitat in the countries of this population is less contiguous than in the Carpathian area, separating the functional habitat into more or less isolated subareas, although there are corridors. This population is also the closest to the critically endangered Alpine bear population, and bears in northern Italy and Slovenia are connected by single male dispersers. However, increasing damages and an increase in nuisance bears in Slovenia make it a challenge to maintain bear numbers at the present level, let alone allow for expanding the population into the Alps (Krofel et al. 2010; Kaczensky et al. 2013). Good information on this population is also available at its southeastern extension, in Greece, where bear numbers are slowly increasing (Karamanlidis et al. 2015). The main conservation challenge in the Dinaric-Pindos population is that it is shared by many countries and subject to widely varying monitoring methods and standards, and especially the general lack of accessible and robust data from Bosnia and Herzegovina, Montenegro, Albania, and Northern Macedonia (Kaczensky et al. 2013; Karamanlidis et al. 2014a–c).

Eastern Balkan population

The core areas of this bear population are in the Rila-Rhodope Mountains and the border regions of Bulgaria, Greece, and Serbia (Fig. 1; Table 1; cf. Kaczensky et al. 2013). The bears in these core areas are genetically connected and may potentially be linked to the very large Carpathian bear population, but this connection remains unsupported (Zlatanova et al. 2009; Zlatanova 2010). The Greek part of this population is located in northeastern Greece and is geographically relatively close to the large and viable Dinaric-Pindos population, however, no genetic connections between the populations have been documented (Kaczensky et al. 2013). In general, habitat and population fragmentation is a main conservation issue in the eastern Balkan population (Zlatanova et al. 2009; Zlatanova 2010). Brown bears are a strictly protected species in all three population range countries, and Greece and Bulgaria have developed bear management plans to aid conservation and management decisions, but especially monitoring programs to keep track of population development can still be improved in this population (Kaczensky et al. 2013).

Karelian population

The Karelian brown bear population stretches from northern Norway via the Kola peninsula and Karelia in Russia into Finland (Fig. 1; Table 1). It has genetic exchange with the Scandinavian population in the south and west and the Baltic in the east (Kopatz et al. 2012; Schregel et al. 2012). Both the Karelian and the Baltic populations also are connected to the main distribution area of Russian bears to the east and thereby with each other (Kopatz et al. 2012; Kaczensky et al. 2013).

Overall, the number of bears is increasing, mainly due to the positive trend in Finland. The density of adult females is this population (outside of Russia) is highest in southeastern and central Finland. In southwestern Finland, density is low and practically all bears are subadult males (Aspi et al. 2006; Kojola/Heikkinen 2006; Kojola et al. 2006). In the northern segment, bears are concentrated at the Finnish-Russian border (Kaczensky et al. 2013). Elsewhere in the north, only a few adult females are found (Aspi et al. 2006; Kojola/Heikkinen 2006; Kojola et al. 2006). The number of bears decreased to 150 animals, the lowest level for hundreds of years, in the late 1960s and started to increase again in the early 1970s, when local hunting associations in eastern Finland decided to stop all hunting for several years (Kaczensky et al. 2013). The return of bears to central Finland was supported by translocating two females from the east in the early 1980s. Genetic analyses indicate that these translocations have been critically important for the establishment of a reproducting bear population in central Finland (Saarma/Kojola 2007; Saarma et al. 2007; Kaczensky et al. 2013). Brown bear viewing tourism is very popular in Finland along the Russian border, and the large amounts of farmed Atlantic salmon used for bait attract bears from far within the Russian territory (Kojola/Heikkinen 2012; Penteriani et al. 2015).

Summary

Despite millennia of persecution, brown bears have made a remarkable comeback in Europe, due to a shift in the management paradigm towards more conservation-oriented management. Several populations are large and are sustainably managed, also by hunting. In these populations it is important to ensure that hunting quotas are kept within the limits of sustainability. However, several brown bear populations in Europe are still small and isolated, and special attention must be paid to their long-term viability in terms of the number of reproducing individuals and population genetics. Generally, large carnivores struggle with negative public opinions that affect conservation and management of their populations. Common management problems are usually linked to depredation of livestock, which is common in Europe. In rare cases, humans are even injured or killed by brown bears (Støen et al. 2018; Bombieri et al. 2019). Effective mitigation measures to keep depredation rates at acceptable levels are crucial for conservation in Europe, as is public education and awareness of brown bears, their ecology and behaviour. Coexistence of humans and brown bears is fully possible, even in the man-made and human-dominated landscapes of Europe.

Acknowledgements

The data and information presented in this chapter rely heavily on the work of many colleagues, researchers, and wildlife managers via the platform of the Large Carnivore Initiative for Europe – IUCN/SSC Specialist Group. More information and publications can be found at www.lcie.org.

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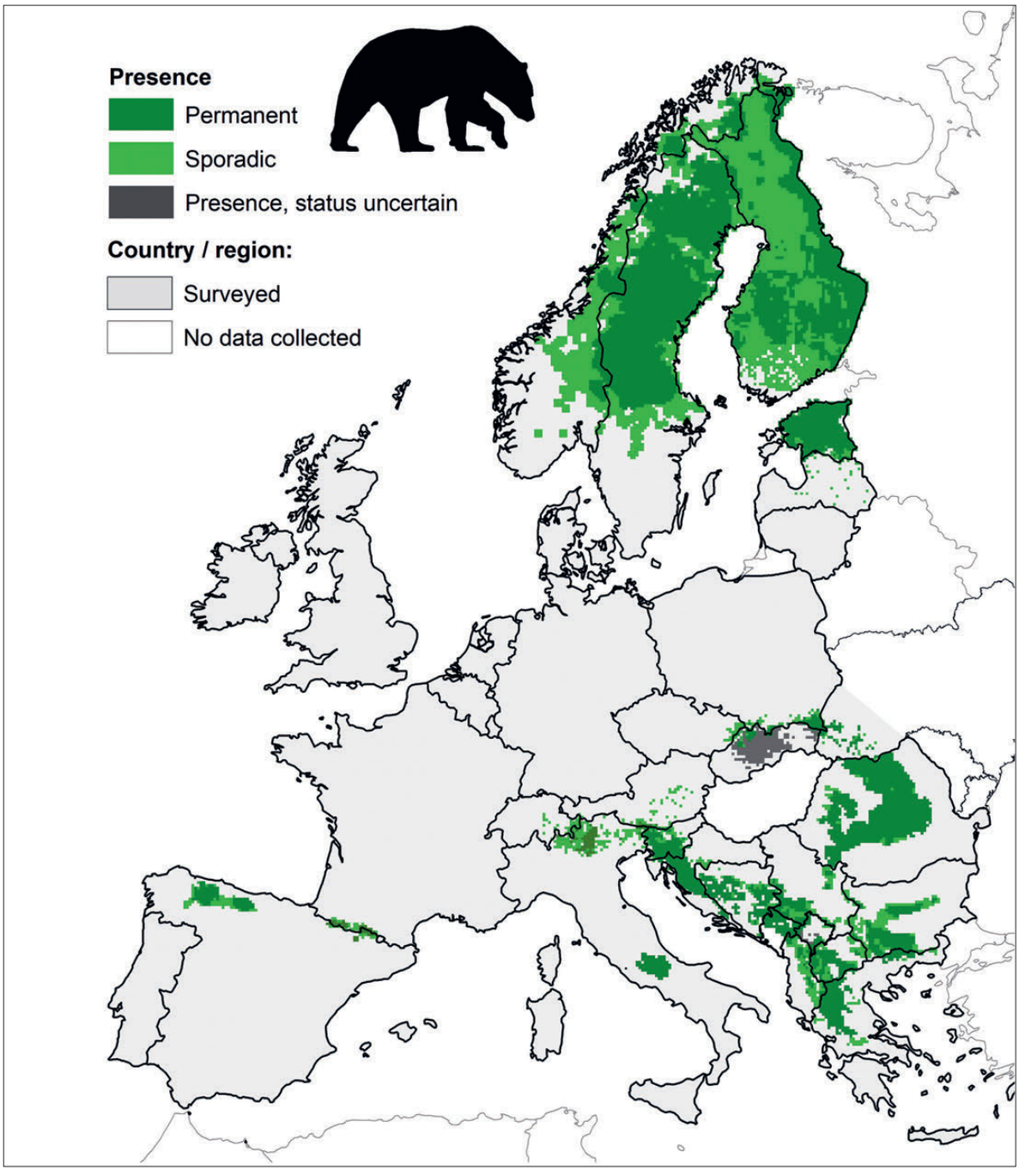


Fig. 1. Current distribution of the brown bear in Europe (data after https://www.lcie.org/Largecarnivores/Brownbear.aspx).

Table 1. Size, trend, and conservation status of brown bear populations in Europe, based on criteria by the International Union for the Conservation of Nature (data after https://www.lcie.org/Largecarnivores/Brownbear.aspx and Kaczensky *et al. 2013).*

Population name	Countries involved	Size (2012–2016), number of individuals	Trend	Conservation status
Alpine	Italy, Switzerland, Austria, Slovenia	49–69	Stable – increasing	Critically endangered
Baltic	Estonia, Latvia	700	Stable	Least concern
Cantabrian	Spain	321–335	Increasing	Critically endangered
Carpathian	Romania, Poland, Slovakia, Serbia	7,630	Stable	Least concern
Central Apennine	Italy	45–69	Stable – increasing	Critically endangered
Dinaric-Pindos	Slovenia, Croatia, Bosnia & Herzegovina, Montenegro, Northern Macedonia, Albania, Serbia, Greece	3,950	Stable – increasing	Least concern
Eastern Balkan	Bulgaria, Greece, Serbia	468–665	Stable	Vulnerable
Karelian	Norway, Finland	1,660	Stable	Least concern
Pyrenean	France, Spain	30	Stable	Critically endangered
Scandinavian	Norway, Sweden	2,825	Decreasing	Least concern

The history of the Scandinavian Brown Bear Research Project – a formidable success story

By Jon E. Swenson and Sven Brunberg

Keywords: Brown bear, Ursus arctos, *project management, international research, long-term research*

Abstract: The Scandinavian Brown Bear Research Project began in northern Sweden in 1984 and central Sweden in 1985. It quickly became a cooperative Swedish study between the conservation management authority and the Hunters' Association in Sweden. This cooperative philosophy was continued by expanding to a Swedish-Norwegian cooperation in 1987 and a continually increasing internationalisation throughout the project's history. During the 35 years from 1984–2018, the period considered here, the project focused on following individual bears from birth to death. We combined research on management-relevant and general ecological topics. The project became one of the world's most successful research projects on large carnivores (actually, on birds or mammals), with 263 scientific papers in international peer-reviewed journals, 35 completed PhD degrees, and 101 completed master's degrees. We believe that one reason for this success was creating a dynamic "research family" of international experts and international students.

Introduction

Modern bear research began in North America in 1961, when a brown (grizzly) bear (*Ursus arctos*) in Yellowstone National Park was the first bear to receive a radio-collar (Craighead et al. 1995). This telemetry-based research gave the scientific community new knowledge of the ecology and behaviour of bears, which was very important to managers. Nevertheless, in the mid-1980s, it was not known how much of this knowledge about North American brown bears was applicable to brown bears in Scandinavia (Bjärvall et al. 1990), where the available knowledge was based on following tracks, and examining dens, scats, etc. (Haglund 1964; Elgmork 1979). Despite a lack of general knowledge, the major relevant questions about bears in Scandinavia in the mid-1980s were quite mundane. Hunters considered the bear population to be dense in many areas and increasingly demanded greater harvests and opening closed areas to hunting (Bjärvall/Sandegren 1987).

Research on bears in Scandinavia did not start as a part of a grand plan, but a long-standing hope among biologists to study bears led some researchers to seize a moment of opportunity while working on other wildlife projects. This is the story of the Scandinavian Brown Bear Research Project (SBBRP), focusing on the 35-year-period from its start in 1984 until 2018, as it became one of the most productive large carnivore research projects in the world. During this period, the project captured 842 brown bears and radio-marked 587 of them in two study areas (Fig. 1), trying to follow them from birth (born to a radio-marked mother) to death. This entailed recapturing them throughout

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 63–76 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134325

their lives, involving 2,228 captures. Following so many individuals for such a long time is quite unique for studies of large carnivores and has allowed the SBBRP to make important scientific contributions and provide valuable knowledge for managers.

A cooperative project from the start: The Swedish Brown Bear Project 1984–1986

The Bear Project began as an offshoot of a study of large carnivore depredation on domestic reindeer (*Rangifer rangifer*) conducted by the Research Division of the Swedish Environmental Protection Agency in the mountains of Norrbotten County, northern Sweden. The project leader was Anders Bjärvall, and the principal project personnel were Peter Segerström, Robert (Robban) Franzén, and Per Ahlqvist. The first funding was provided by the Swedish Office of the World Wildlife Fund (now World Wide Fund for Nature).

On 22 March 1984, six people followed the tracks of a yearling female bear that had been inadvertently scared out of its den 15 days earlier. They found it, hibernating or sleeping, under the branches of a Norway spruce tree (*Picea abies*), and Per Ahlqvist immobilised it using a jabstick. This started the Bear Project, which was among the first wildlife studies in Sweden using radiotelemetry. The fascinating story of this capture has been described (in Swedish) by Bjärvall/Ahlqvist (1985) and Bjärvall (2007). In 1985, three more bears were captured, two from the ground at a moose (*Alces alces*) carcass and one from a helicopter (Bjärvall/Sandegren 1987). Also in 1985, a bear study started in Dalarna County, central Sweden, on the initiative of local chapters of the Swedish Sportsmen's Association (later named the Swedish Hunters' Association, then the Swedish Association for Hunting and Wildlife Management). The association's central administration provided financing from its research fund. It started as an extension of a moose study in the area conducted by the association's Research Unit. The project leader was Finn Sandegren, and the principal project personnel were Per Ahlqvist, Lennart Petterson, and volunteer Sven Brunberg.

Three bears were captured in 1985, the first on 17 March, using a jabstick on a yearling bear in its winter den after following the mother's tracks to the den; the other yearling in the den escaped. The other two bears were immobilised from a helicopter (Bjärvall/Sandegren 1987). After this, project personnel used snowmobiles to find a track on the snow in the spring, drove in successively smaller circles to locate the area where the bear was, called in a helicopter to find it within the circle, and the bear was captured by immobilising it from the helicopter. This required manpower, which was provided by volunteers; especially important were Knut Hans Hansson and Gunnar Håkansson, Ingemar Gustavsson from Orsa Communal Forest, and helpers from the Swedish Sportsmen's Association in Gävleborg County.

Already in 1985, these two projects combined into the Swedish Brown Bear Project, a cooperation between the Swedish Environmental Protection Agency and the Swedish Sportsmen's Association. The goals of this phase of the Bear Project were to obtain information on movements, activity patterns, and population dynamics of brown bears in both the northern and southern portions of the species' range (Bjärvall/Sandegren 1987; Bjärvall 2007).

The project becomes Scandinavian: The Swedish-Norwegian Brown Bear Project 1987–1990

There had been interest in Norway to study brown bears for several years. In 1987, Petter Wabakken, a research biologist with the Norwegian Institute for Nature Research, who also was cooperating with Swedish colleagues on studies of the grey wolf (*Canis lupus*), asked to join the Swedish Bear Project. This was accepted, creating a Scandinavian cooperative project. The first two bears captured

in Norway were caught in Hedmark County (later Innland County) near the Swedish border in 1988 (Bjärvall et al. 1990).

The bears received Very High Frequency (VHF) collars, which had to be relocated regularly by people using antennas, in contrast to the Global Positioning System (GPS) collars used today (Fig. 2). In the south, Per Ahlqvist and Sven Brunberg and other volunteers located the bears periodically from a vehicle, using the extensive network of forest roads in the rolling landscape. But the bears were often not found, apparently because they had moved out of the search area. Olle Persson, a volunteer who flew a small plane to locate radiomarked moose, also searched for radioed bears. From 1988, the Bear Project organised flights with local flying clubs and in 1990 started engaging Jämtlands Flyg, a local flying service, to have a better continuity and to locate bears not found by volunteers. The number of volunteers increased slowly to about 10–15. Their role was to locate radiomarked bears at least weekly and to help to find and capture bears. The local volunteers were intimately involved in the project and provided important transparency and informed local people about the project. Petter Wabakken expanded the use of volunteers into Norway. We also began having a meeting each winter, where the volunteers were invited to hear about our results and plans, and to discuss the volunteers' experiences and practical challenges during the past season. The field situation was much different in the north, with mountainous terrain, few roads, and travel restrictions in national parks. There, Peter Segerström and Robban Franzén conducted most of the captures and relocations from helicopters and airplanes.

This Scandinavian cooperation also brought Norwegian funding into the project. At this stage, economic support came from the Swedish Environmental Protection Agency, Norwegian Directorate for Nature Management (later Norwegian Environmental Directorate), Administrative Office of Hedmark County (later Innland County, Norway), World Wide Fund for Nature Offices in Sweden and Norway, and the Swedish companies Norma, Volvo, and Ockelbo (Bjärvall et al. 1990). As the project was in an early phase, it had produced only three scientific publications, one master's thesis (no fieldwork), and two bachelor's theses by 1990.

Beyond Sweden and Norway: The Scandinavian Brown Bear Research Project 1991–2018

The SBBRP experienced major changes in 1991, when Anders Bjärvall left the project for two years to work with nature conservation in Tanzania. The Swedish Environmental Protection Agency's Research Committee asked several Swedish researchers if they were interested to become a co-leader of the project, but all declined, primarily because of the project's low scientific productivity and/or the conflicts that often surround bear research and management. The financing agencies considered terminating the project, and only two new bears were marked in 1991. But the Norwegian Directorate for Nature Management was especially interested in continuing the project and offered to cover a budget deficit. Per Alqvist knew Jon Swenson, an American from Montana who worked at Grimsö Research Station, and introduced him to the Bear Project. Jon Swenson had experience with capturing and studying American black bears (*Ursus americanus*) and had helped the Bear Project estimate the number of bears in Sweden. So, he knew about the dedicated personnel in the project and their excellent database. He finished his PhD degree on hazel grouse (*Tetrastes bonasia*) in 1991 and applied to the Swedish Research Committee for a research project studying the effect of modern forestry on hazel grouse. Instead, the Committee gave him funding to be a co-leader of the Bear Project, along with Finn Sandegren.

One of the first changes Jon Swenson proposed was to consolidate the names "Swedish-Norwegian Bear Project" (used in Sweden) and "Norwegian-Swedish Bear Project" (used in Norway) to the "Scandinavian Brown Bear Research Project". The fieldwork continued as before in the north, but

several changes were made in the south in 1992, where Sven Brunberg and Arne Söderberg began capturing the bears and Sven Brunberg became the field supervisor, with a 50 % position in the project (the other 50 % as supervisor of Orsa Communal Forest's machine park). Capturing and recapturing bears from a helicopter allowed us to follow individuals from birth until death. As the SBBRP became a long-term project, this individual-based dataset became increasingly valuable.

Major changes were also made in 1993. Jon Swenson accepted an offer of a permanent position as a researcher at the Norwegian Institute for Nature Research, remaining co-leader of the SBBRP. Also, Petter Wabakken accepted a position as a biologist at the County Administration in Hedmark (now Innland), and his participation in the project decreased gradually as he concentrated more on wolf management and research. The same year, the project borrowed a house for master's students in the village of Noppikoski in Dalarna County and in the center of the southern study area. Our first student with fieldwork was Bjørn Dahle. We quickly realised that it was better to have several students working together. So, from 1994, we always had several students in the field. From 1993–1997, nine students lived in Noppikoski while conducting their fieldwork. Arne Söderberg maintained the database, working full-time for the Swedish Sportsmen's Association. Sven Brunberg, who had responsibility for capturing bears and supervising the practical aspects of students' fieldwork, began to work full-time in the project in 1998. In 1999 Jon Swenson accepted a position at the Norwegian University of Life Sciences, which allowed him to keep a position at the Norwegian Institute for Nature Research and leadership of the SBBRP.

Bengt Röken was our first consulting veterinarian. Jon Martin Arnemo took over in 1997 and eventually obtained professor positions at both Hedmark University College (later Inland Norway University of Applied Sciences) and the Swedish University of Agricultural Sciences. This allowed him to lead our veterinary work, develop and improve capture protocols, support our applications for capture permits to Swedish and Norwegian ethical committees, and supervise veterinary students. Jon Arnemo's participation led to many improvements in capturing, for example by reducing the capture-caused risk of mortality from 3.8 % to 0.3 % (Arnemo et al. 2006) and improving methods to measure and reduce stress in captured bears.

Robban Franzén had been searching for a geneticist in Sweden to determine the genetic status of the Scandinavian bear population. When that failed, Jon Swenson contacted some international experts. Pierre Taberlet at Université Joseph Fourier (CNRS) in Grenoble, France, responded positively. We met in 1994 and started an extremely productive cooperation. Pierre Taberlet had been one of the first to study the genetic structure of European bears (Taberlet/Bouvet 1994) and had developed a method to identify individuals from DNA in hair (Taberlet/Bouvet 1992). He introduced us to the multitude of ecological questions that could be answered with genetics methods (and discovered more along the way) and helped us obtain funding for PhD students and postdoctoral researchers.

We could have lost the opportunity to show how productive this cooperation was to be, because the funding authorities almost terminated the project for a second time in 1996–1997. Fortunately for us, we convinced them of the potential that the project had and we were allowed to continue.

The project had become a truly international cooperation with diverse personnel. Sven Brunberg, Peter Segerström, and Robban Franzén were excellent fieldworkers with much practical experience, and Robban Franzén worked for the Swedish Environmental Protection Agency, Peter Segerström had contacts with the Norrbotten County Administration and Sámi reindeer owners, Finn Sandegren's position connected us to Swedish wildlife managers and hunters, and Petter Wabakken brought connections and perspectives from Norway, where the attitudes towards bears and management challenges are very different from Sweden. Jon Swenson had worked as a wildlife management biologist in Montana for ten years, had research experience in conservation biology and behavioural ecology, and a Scandinavian connection (a Norwegian wife and grandparents from Norway and Sweden). Jon Arnemo had experience with many species of wildlife in both countries, and Pierre Taberlet was

a world-class research geneticist and ecologist. We were united by our interest in bears and our commitment to answer management-oriented questions with solid basic research. While conducting basic research, we always remained aware of the potential uses for management that our results might have.

The project grew rapidly in number of captures, students, and volunteers (to about 25). In order to unify this growing number of people, the scientific and wildlife management questions we were asking, and the cultural and academic diversity that resulted from our internationalisation, we made an active decision to try to bond everyone into a "research family". Our plan was to design the project based on Jon Swenson's experience in the Montana Department of Fish, Wildlife and Parks, with a very flat structure, based on open discussions, cooperation, transparency, and working for a common goal. It was an enjoyable and inspiring task, although it required effort. The "research family" approach was also necessary, because basing our project on primarily external researchers and externally funded students had the advantage of channeling most of the funding from the management agencies to fieldwork (rather than wages), but the disadvantage was that the leaders had no formal supervisory authority.

Nevertheless, according to Cheruvelil et al. (2014). this approach can lead to "high-performing collaborative research teams" who are committed to a common purpose, approach, and mutually accountable performance goals and can be created and maintained when team diversity is effectively fostered and interpersonal skills are taught and practiced. We believe that we achieved this in the SBBRP.

A major change occurred in 2002, when the Swedish Association for Hunting and Wildlife Management terminated its Research Division. Finn Sandegren retired and Arne Söderberg transferred to the National Veterinary Institute (with 50 % financing from the SBBRP through 2005). From this time, Jon Swenson and Sven Brunberg were co-leaders, Jon Swenson as the scientific leader and Sven Brunberg as the leader of practical aspects, including the fieldwork, database, and economy. In 2008, we decided to formalise the administration and cooperation of the project and formed a Steering Committee, consisting of the leaders, Genetics supervisor Pierre Taberlet, Veterinary supervisor Jon Arnemo, future Swedish project leader Jonas Kindberg (who became a co-leader of the project after he defended his PhD in 2010), and all active postdoc researchers in the project, who at the time were Andreas Zedrosser and Ole-Gunnar Støen. The reason to form the Steering Committee was to better interact with the PhD students and cooperating researchers, approve the inclusion of new researchers and PhD students into the project, help to obtain funding, and formulate policy, particularly regarding criteria for cooperating researchers, publication and authorship, media, and data ownership.

The project grew even more in 2009 as more cooperators joined the project. Physiologists Ole Fröbert from the Örebro University Hospital, Sweden, and Stephane Blanc from the University of Strasbourg (CNRS), France, were interested in how understanding the physiology of hibernating bears might help solve some of humanity's modern health problems, related to obesity and inactivity. Our bears become obese prior to hibernation and remain inactive for six to seven months, but still remain healthy, in contrast to humans. They asked if they could cooperate with us and obtain physiological samples from individual bears while both hibernating and active. Obtaining samples from the same bears while active and hibernating required new field methods, including capturing bears in their dens (Evans et al. 2012), which we only had done at the very start of the project. This time, we recaptured previously radioed bears in February and only used 2–4-year-old bears, for safety reasons. Then we recaptured the same bears from a helicopter in June to obtain duplicate tissue samples. The same year, Andreas Zedrosser initiated contact with Fanie Pelletier at the Université de Sherbrooke, Québec, Canada, and we started to cooperate. Fanie Pelletier provided funding for master's and PhD students, who concentrated their studies on the life history, the direct and indirect effects of hunting on population dynamics, and selection for reproductive and behavioural traits of Scandinavian bears.

We had always known that brown bears (called grizzly bears in interior North America) showed a wide range of ecological, behavioural, and life-history adaptations throughout their range, which is the largest and most diverse (deserts, deciduous and coniferous forests, alpine and tundra) for any bear. Therefore, it was important for us to understand where the Scandinavian brown bear fits into this world-wide context. We did this in two ways; by cooperating with researchers working on brown bears in other areas and by integrating PhD students working on brown bears in other ecosystems into our group. Our first such cooperation was with Djuro Huber, University of Zagreb, and Miha Adamič, University of Ljubljana, where we compared the body growth of brown bears in northern and southern Europe (Swenson et al. 2007). In 2006, we started a cooperation with Gordon Stenhouse, the leader of the Foothills Research Institute Grizzly Bear Program in Alberta, Canada, and his collaborator Marc Cattet at the Canadian Cooperative Wildlife Health Centre, University of Saskatchewan. This cooperation was to help understand patterns of brown bear population viability in the human-dominated boreal landscapes of Alberta and Scandinavia in order to provide general applications towards conservation management. In 2013, we started a cooperation with Nuria Selva's group at the Institute of Nature Conservation, Polish Academy of Sciences, as part of the Polish-Norwegian Research Program. One product of this project was an evaluation of the factors influencing the decline of brown bears in Europe during the past 12,000 years (Albrecht et al. 2017). Our PhD students working on other brown bear populations in this period were Muhammad Ali Nawaz and Alice Valentini (Himalaya Mountains, Pakistan, both finished in 2008), Jodie Martin (Pyrenees Mountains, France, 2009), Andrés Ordiz (some research on bears in the Cantabrian Mountains, Spain, 2010), and Odbayar Tumendemberel (Gobi Desert, Mongolia, finished in 2020). These cooperative projects gave our students and us valuable insights into how diverse the brown bears are and how the Scandinavian brown bear is similar to, or different from, other populations.

By 2010, with the inclusion of human physiologists in the project, we needed a more formalised structure in the SBBRP. The Steering Committee decided to require that proposals for fieldwork, proposed papers, and proposed new cooperating partners would be described in "one-pagers", which we had learned from our Alberta cooperators. The fieldwork "one-pagers" were to be decided upon each September for the upcoming field season, and cooperation "one-pagers" were to be discussed at the winter Steering Committee meeting. Also, Ole Fröbert and Stephåne Blanc accepted an invitation to become Steering Committee members in 2011 (Fabrice Bertile later replaced Stephåne Blanc). It became more complicated to coordinate the many new researchers and laboratories in human physiology, as they often had different research cultures than wildlife biologists. However, this cooperation enriched the project, produced extremely interesting results, and has given us a better understanding of bear ecophysiology.

In 2011, we also decided to terminate the research in the north, because of funding restraints, the difficulty to conduct intensive studies there, and the newly adopted and aggressive bear removal policies of the government of Norrbotten County, which resulted in the killing of GPS-collared bears when they entered domestic reindeer calving areas. In 2012, for example, county managers allowed and carried out the management killing of 11 of our 29 marked bears, 20 of which had GPS collars. We were required to provide them with locations of our GPS-marked bears. We decided to keep following our two oldest females (27 and 20 years old), because we had long reproductive histories from them, and remove transmitters last from those that had not yet given birth, in order to document more ages of first reproduction. We formally terminated our research in the north in 2013. We had captured 290 bears in the north, 183 of which were radio-marked, and followed 30–50 collared bears per year there during 1994–2012. In the south, by 2018, we had captured 552 bears, followed 404 of them with radiocollars, and had 50–80 bears marked annually since 1996. As we moved to using GPS transmitters, which allowed automated locations of bears, thus making on-the-ground locations unnecessary, the number of local volunteers declined, although not before the mid-2000s. After 2010, we still had a few active local volunteers.

The Swedish Environmental Protection Agency's Wildlife Management Fund (WMF) and the Norwegian Environment Directorate have been the project's major and most stable funding sources. During the last 20 years, the project has received an average of SEK 4.5–5 million (about USD 500,000) annually. The major contributors during 2003–2014 were: Norwegian Environmental Directorate (32 %), WMF (28 %), Swedish Environmental Protection Agency's Biological Diversity Fund (16 %), regional management authorities in Sweden and Norway (8 %), funds generated by our medical physiology cooperators (4 %), and 2 % each from a Polish-Norwegian cooperative project funded by Norway, the Austrian Science Fund, the Swedish Association for Hunting and Wildlife Management, and WWF-Sweden. The project would not have been able to receive this supplemental funding without the stable, long-term support of the Swedish and Norwegian management agencies.

At the end of 2018, Jon Swenson retired, being replaced by Jonas Kindberg as sole leader. Jonas Kindberg worked for the Swedish Association for Hunting and Wildlife Management at the time, and now manages the Norwegian Large Predator Monitoring Program (Rovdata) at the Norwegian Institute for Nature Research. Sven Brunberg retired a year later and has been replaced by David Ahlqvist (the son of Per Alqvist, who captured the first bear in the project), who does most of the capturing, and by Andrea Friebe (who obtained her master's and PhD degrees in the project), who manages the other aspects, such as database, equipment, etc. The SBBRP continues and will hopefully be active and productive for many more years.

Master's students in the SBBRP

The local volunteers appreciated and were motived by being included as true members of the project, with regular feed-back from the researchers. We used the same philosophy for our students and student volunteers. We included them in our research meetings at the field station, and Sven Brunberg held two practical meetings weekly during the field period. One was to follow up on their fieldwork, ensure that they followed their planned scientific work with the expected quantity and quality of data, and give them support if some aspects did not go well. The second meeting was aimed at building a quality collective social experience; cleaning the field station, taking turns making food (serving specialties from the students' countries was very appreciated), going on group fishing trips, etc. We worked to include everyone, had private conversations to help with conflicts or other difficulties, and encouraged whenever we could. Our goal was that everyone should work hard as a part of the research family, while also obtaining a quality thesis for themselves. Many students attended the winter meetings for the local volunteers and reported on the results of their projects. Our master's students were a diverse group; 58 % were women and, although most were from Norway and Sweden, we also had master's students and university volunteers from Austria, Belgium, Canada, Chile, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Iceland, Italy, Japan, Netherlands, Slovakia, Slovenia, South Africa, South Korea, Spain, Switzerland, Syria, Ukraine, UK, and USA.

In 1998, Orsa Communal Forest offered us the use of their house at Kvarnberg, close to Noppikoski, where 46 students and university volunteers lived while conducting their fieldwork until the end of the 2005 field season. When Orsa Communal Forest decided to sell this house, a donor gave the project a field station in the small village of Tackåsen, also close to Noppikoski, in 2006, and Örebro University Hospital made it possible to buy another house there (Fig. 3). More than 100 students and student volunteers stayed at the field station in Kvarnberg during 2006–2018.

How successful was our goal to include master's students in the SBBRP? Success is hard to measure, but we are convinced that our approach helped produce many successful researchers. Of the 101 students who successfully completed their master's theses by the end of 2018, 52 had published their results as a scientific paper, which is an exceptionally high percentage, and 31 were accepted

into a PhD program, which is also a high percentage. And they apparently liked the SBBRP, as 11 of our 35 PhD students (who had completed by 2018) had obtained their master's degree in the project and a total of 16 had been associated with the project earlier, as a student, student volunteer, or employee.

PhD students in the SBBRP

Our first PhD student was Bjørn Dahle, who started his fieldwork in 1999. Thus, our first field-based master's student became our first PhD student. Pierre Taberlet then provided funding for two PhD students and soon we obtained independent funding for three more. Our PhD students lifted our research to a much higher level. We held PhD seminars twice a year, in association with bear conferences or excursions to other bear study areas, when possible. This helped promote a feeling of shared experiences, belonging in the project, and cooperation, and was extra important due to the differences in academic background, culture, and universities the students were attending. This paid off in an enormous productivity and diversity of ideas and perspectives, although competition between students was always there – with both positive and negative aspects. Our PhD students had citizenships in Sweden, Norway, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hungary, Italy, Mongolia, Pakistan, Spain, and USA, and 60 % of the 35 completed PhD students up to 2018 were women. An example, using genetics, of how our PhD students cooperated is as follows: Alain Cercueil and Eva Bellemain developed a genetics-based program to discern pedigrees, and Eva Bellemain conducted the genetics laboratory work on tissue samples. She used this to study reproductive success, sexually selected infanticide, and estimate population size using DNA from feces. These data also were used in the theses of Andreas Zedrosser on life-history strategies, Ole-Gunnar Støen on female social organisation, Ali Nawaz and Jonas Kindberg for population estimates, Andrés Ordiz for female reproductive suppression, Sam Steyaert for sexually selected infanticide, and Shane Frank for the effects of hunting on social organisation. Later, Alice Valentini developed a technique to determine the diet of bears and other animals from DNA in the feces, which Ali Nawaz used to estimate the diet of brown bears in Pakistan and Marcus Elfström used to determine whether bears near human habitation (in Sweden) had obtained human-derived food there.

In addition, we received 14 postdoctoral scholarships for the project, 12 of which went to former PhD students. This provided about 30 additional years of work for the project and was also instrumental for our high productivity. Many of the students and postdoctors in our project have gone on to successful positions in academia, research, and management, not only in Sweden and Norway, but in many other countries. Not surprisingly, given SBBRP's international philosophy, many are working outside their home countries.

Outreach

We in the SBBRP have felt strongly that we should contribute knowledge that would be the basis for the best possible management and conservation of the brown bear in Scandinavia and other bear populations. One reason, of course, was that most of our funding came from public resources via management agencies, but it was also the result of our personal motivation. Over half of our papers were relevant for wildlife management, on subjects such as population and trend estimation, effects of hunting, human-bear relations, population ecology, predation, genetic status, habitat use, and population expansion. Additional papers were about the effects of capture and marking. Of course, papers on basic ecological or behavioural topics that do not seem to be directly applicable to man-

agement today might become valuable and relevant to management in the future, and several in this category have already turned out to be relevant for management.

The members of the SBBRP have invested a lot of time in disseminating our results to wildlife managers and the public, mostly in Scandinavia, totaling about 35–40 weeks of effort annually in total for all members during 2003–2014. About every other year, we held a symposium to inform primarily Swedish and Norwegian wildlife managers and the general public about our findings, with most presentations in Scandinavian languages. These were attended by about 100 participants. Our experience is that this has been an important way to reach Scandinavian managers with our latest results. We have also had two similar, but smaller, symposia in English in Finland and Spain. We also participated in all the International Conferences on Bear Research and Management and, in very many of these conferences, members of the SBBRP gave more oral presentations than persons from other projects.

How successful has the project been?

The SBBRP produced 263 scientific papers in international peer-reviewed journals and 35 completed PhD degrees during 1984–2018. To put this production in perspective, we compared it with 91 long-term, individual-based studies of mammals and birds worldwide (Mills et al. 2015; Fig. 4). None of these studies produced more PhD theses or more scientific papers in relation to the length of study (i.e. located to the left of the red lines in Fig. 4) than the SBBRP. That is the basis for including "a formidable success story" in the title. The papers and theses are available at www.bearproject.info.

The SBBRP has received three international reviews, all of them very positive. In the international review of Swedish wildlife research covering 1997–2001, the SBBRP was the only project of 22 evaluated as "outstanding". The evaluation stated: "This outstanding project has most successfully brought science and management together in a very productive and visible way. The publication rate has been excellent showing that applied and fundamental research by no means is mutually exclusive. The incorporation of hunters and volunteers has probably contributed to its success story." In a 2000 international review of research in biology at the university where Jon Swenson worked, commissioned by the Research Council of Norway, the SBBRP was listed explicitly as one of "two strong fields (physiological plant ecology and research on brown bear) […] formed or strengthened by recent recruitment". The international review of Swedish wildlife research covering 2003–2014 evaluated the four large Swedish-financed carnivore projects collectively (on brown bear, grey wolf, wolverine [*Gulo gulo*], and Eurasian lynx [*Lynx lynx*]). It stated that these projects "had a major scientific impact far beyond the field of carnivore research […] and were well-cited even within the whole field of population ecology".

Jon Swenson's research and conservation work, which was dominated by the SBBRP, resulted in several awards. In 2019, he was awarded Honorary Membership in The Wildlife Society (an average of two of these honorary memberships have been awarded annually during the past 70 years). He was elected a member of both the Norwegian Academy of Science and Letters (in 2002) and the Royal Norwegian Society of Sciences and Letters (in 2007). In 2005, he was awarded the International Association for Bear Research and Management President's Award for "Outstanding Service to Bear Conservation". His university awarded him the "Research Prize for an especially meritorious contribution to research, supervising of PhD students, and professional awareness of the Norwegian University of Life Sciences", which included a stipend for a PhD student (won by Richard Bischof). The SBBRP was the basis for a prestigious, 1-year-project (2015–2016) funded by the Norwegian Ministry of Education and Research entitled "Climate effects on harvested large mammal popula-

tions" at the Centre for Advanced Study at the Norwegian Academy of Science and Letters, Oslo, along with Atle Mysterud, University of Oslo, with seven other researchers participating. Jon Swenson's university awarded him a postdoctoral fellowship as a reward for obtaining this project; Andrés Ordiz was chosen for this postdoctoral position. Sven Brunberg was also recognised for his outstanding, career-long work in the SBBRP with an Honorary Doctorate Degree from the Norwegian University of Life Sciences. Andreas Zedrosser received the "Prize of the Prof. Anton Kurir Foundation 2007 for exceptional habilitation or doctoral theses" at the University for Natural Resources and Life Sciences, Vienna, for his PhD thesis.

Jon Swenson also has received several awards based on SBBRP scientific publications. Of course, the co-authors did most of the work on almost all of these publications, so they should be considered as awards to the entire SBBRP. He was listed as No. 69 in the ranking of the top 100 published researchers in Norway during 2012–2016 and was presented the "Award for Most International Publications during 2012–2014" from the Norwegian Institute for Nature Research. A paper in "Science" that he co-authored (Chapron et al. 2014) was ranked as No. 48 among the top 100 most influential papers for 2015 by Almetric. Richard Bischof and Andreas Zedrosser received the "Granser Research Prize for Sustainable Hunting" in 2011 for their paper Bischof/Zedrosser 2009.

Several other awards were based on public outreach. In 2011 the SBBRP was awarded the "Prize for Dissemination of Research" by the Norwegian University of Life Sciences and, in 1997, Jon Swenson was awarded the "Svein Myrberget Memorial Award for Outstanding Work in the Field of Popular Science", presented by the Norwegian Institute for Nature Research. In 1994, he was awarded the "Hugin og Munin Pris", an award presented cooperatively by the Norwegian Institute for Nature Research and Directorate for Nature Management for "bringing new influence and objectivity to a controversial area for research and management".

Epilogue

During the most active and productive period of the SBBRP, Jon Swenson and Sven Brunberg were the primary or only leaders of the project. We are grateful for this opportunity, for the trust that the management agencies showed us to fund the project for such a long time, for the friends we made with students and researchers, for the exciting and motivating research and social environment, for the knowledge the entire project produced, and that the two of us worked together so well as good, trusted friends with mutual respect and common goals. We never disagreed about our goals nor about how to reach them. This was very useful, because the project was always changing; first adding a master's student, then several, then international cooperators, then PhD students, then postdoctoral researchers, then more international co-operators. We had to adjust our group-management methods continually. Having such a diverse group caused challenges, of course, but we think everyone learned and grew from them. And we believe that the cultural and educational diversity was a major reason the project was so successful. Another reason was the project's methodology; gathering individually based data through generations over a long time, which was possible when the same basic methods were followed (with some improvements, such as adding genetic analyses and GPS technology) throughout the study, even though we investigated a wide range of topics underway. Finally, we are convinced that creating our "research family" was essential for the success of such a large and diverse project, where the leaders did not have employer responsibilities for the students and cooperators.

Acknowledgements

Leading the SBBRP was a fantastic experience, and we thank everyone who contributed. We also thank Andreas Zedrosser and Andrés Ordiz for helpful comments on the manuscript.

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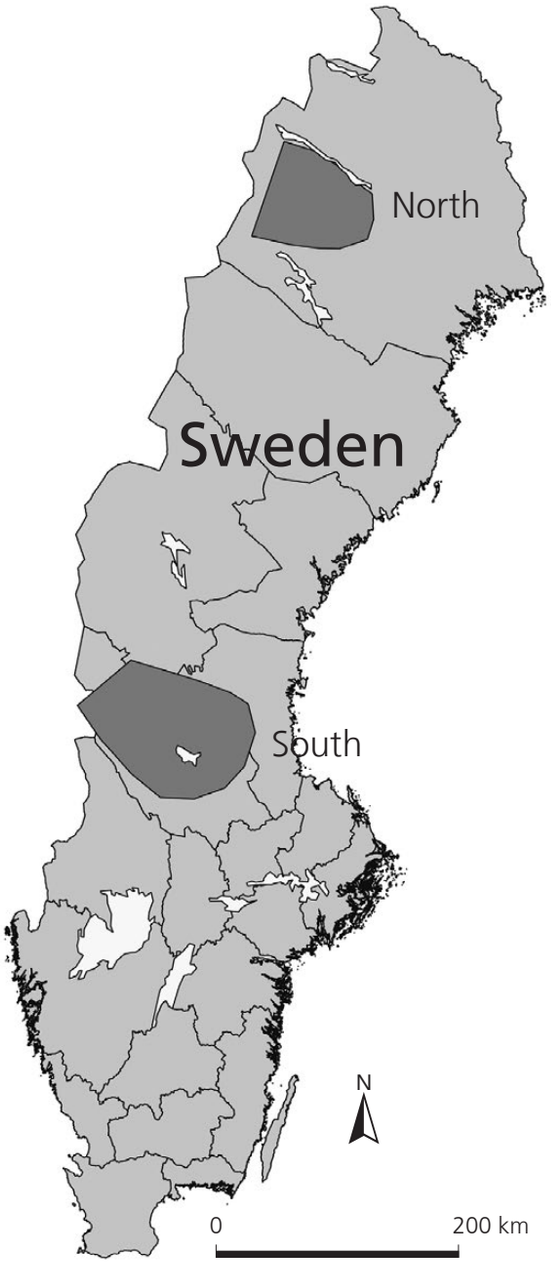


Fig. 1. The two major study areas of the Scandinavian Brown Bear Research Project. The darker areas show where most of the brown bears were captured. Note that the southern study area extends into Norway (map J. Hansen).



Fig. 2. A female brown bear is being captured using a helicopter and a tranquilising dart fired from a gas-operated dart gun as part of the research activities of the Scandinavian Brown Bear Research Project (photo A. Zedrosser).





Fig. 3. The Scandinavian Brown Bear Research Project's field station in Tackåsen, Sweden, with the main building and extra sleeping quarters (photos J. Swenson [a]/O. Fröbert [b]).

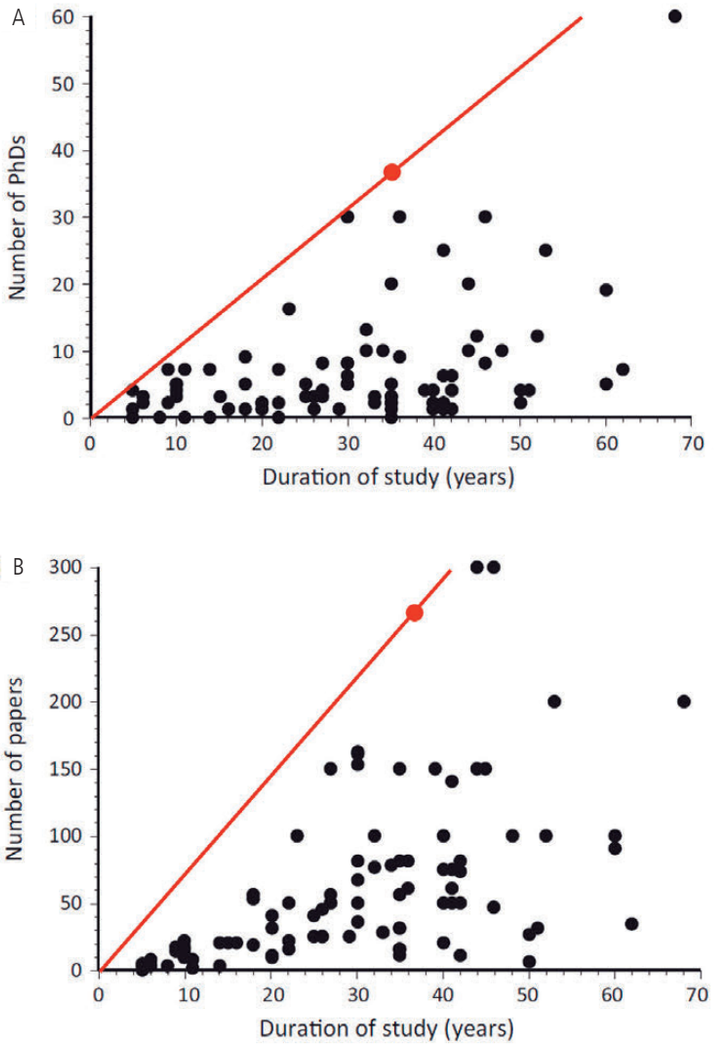


Fig. 4. Number of completed PhD theses (a) and scientific papers (b) produced by 91 long-term research projects on individual-based field studies of birds and mammals worldwide in relation to the length of the study (after Mills *et al. 2015) and those of the Scandinavian Brown Bear Research Project during 1984–2018 (red circles). The studies to the left of the red line have been more productive than the Scandinavian Brown Bear Research Project.*

The management of brown bears in Sweden, Norway and Finland

By Michael Schneider, Andreas Zedrosser, Ilpo Kojola and Jon E. Swenson

Keywords: Brown bear, Ursus arctos*, population management, hunting, Sweden, Finland, Norway*

Abstract: There are about 2,700 bears in the central and northern parts of Sweden, about 150 bears in Norway (most of them along the Swedish, Finnish, and Russian borders), and about 2,400 in Finland, mostly in the eastern parts of the country. The conservation status of the brown bear is considered "Near Threatened" in Sweden and Finland and "Endangered" in Norway. All three countries have well-developed population monitoring programs, but the methods used differ widely. However, because these countries share the same population of bears, cross-border collaboration in research, management, and the sharing of information is well established. All three countries have damage compensation systems in place, however, the type of damages vary; in Sweden and Finland they are mainly due to depredation of semi-domestic reindeer in the northern parts of the countries, while damages in Norway are mainly related to the depredation of free-grazing sheep and they are concentrated in the eastern part of the country, along the border with Sweden. Bears in Sweden and Norway are managed at the regional level, while bears in Finland are managed on the national level. Hunting of bears is allowed in all three countries nowadays.

Introduction

Humans have always been interested in large carnivores, due to the threat they cause to livestock and sometimes to humans as well, but also because their strength, agility and beauty fascinate and inspire the human imagination. Five species of large carnivorous animals exist in the Nordic countries of Sweden, Finland, and Norway, the brown bear (*Ursus arctos*), grey wolf (*Canis lupus*), wolverine (*Gulo gulo*), Eurasian lynx (*Lynx lynx*), and golden eagle (*Aquila chrysaetos*). In this chapter, we focus on the management of brown bears in Sweden, by using Västerbotten County as example, but also provide information on bears and their management in Norway and Finland.

Brown bears were common in northern Europe until the middle of the 1800s, when their populations decreased rapidly due to human persecution. The species was protected in the 1900s, earliest in Sweden and latest in Norway. The populations increased after protection, especially so in Sweden and in Finland, which received immigrants from Russia. The increase in Norway was much less and came later, because the bear had been exterminated as a reproducing species and its return was dependent upon immigration from neighbouring countries (Swenson et al. 1995; see Fig. 1). Today, there are about 2,700 bears in the central and northern parts of Sweden, about 150 bears in Norway (most of them along the Swedish, Finnish, and Russian borders), and about 2,400 in Finland, mostly in the eastern parts of the country (Fig. 2; cf. Bischof et al. 2020). Bear management differs quite a lot among the Fennoscandian countries.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 77–98 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134326

Historic changes in brown bear populations and distribution in Sweden, Norway, and Finland

Sweden

Swedish public policy regarding the brown bear has changed greatly through the centuries. Early on, the national policy was to exterminate the species, and as early as in the 14th century there were laws in Sweden that required people to take part to meet this goal (Danell/Bergström 2016). Bounties were introduced in 1647 as a measure to help reach the extermination objective. Thousands of bears still existed in Scandinavia in the mid-1800s, with an estimated 3,100 bears in Norway and 1,650 in Sweden. By the end of the 19th century, the numbers of bears were extremely low in both countries. The lowest population level occurred around 1930 and was estimated at 130 bears, all of them living in Sweden (Swenson et al. 1995), although genetic estimates indicate that the numbers were somewhat higher (Xenikoudakis et al. 2015).

However, changing opinions among academics, hunters, and the public resulted in a paradigm shift at the end of the 1800s in Sweden, leading to the removal of bounties in 1893. Several other measures to protect bears, such as restrictions on where they could be killed and making any dead bear the property of the state, additionally contributed to the subsequent population increase (Swenson et al. 2017). The management paradigm in Sweden changed again in 1943, when hunting seasons were introduced. Nevertheless, the bear population continued to increase and reached a size of about 3,300 bears in 2008, some 60 years later (Kindberg et al. 2009). This increase was broken when changed management objectives in the counties with bears caused a decline of the population, which was subsequently estimated to consist of about 2,700 bears in 2018 (Bischof et al. 2020).

Norway

Norway did not change its extinction policy when Sweden did, and bears were virtually eliminated by 1920–1930, even though there were about twice as many bears in Norway as Sweden in the mid-1800s (Swenson et al. 1995). Since 1975, bear observations increased again in Norway, due to immigration from neighbouring countries and coinciding with a pronounced increase in the Swedish bear population; bears reappeared sooner in areas closer to the remnant Swedish populations (Swenson et al. 1995). Large carnivores are managed intensively in Norway, based on small population goals and small management zones where resident brown bears are accepted. In combination with low dispersal abilities of female bears, this reluctant attitude towards bears has prevented the species from re-establishing a large population in the country.

Finland

According to a back-calculation, there had been approximately 1,000 bears in Finland until their decline started around 1875. Thereafter, the population declined by about 210 bears per decade until 1905. The decline continued until 1915, when an estimated population of 129 bears was left in Finland (Mykrä/Pohja-Mykrä 2015). At this time, bears had disappeared from southern, southwestern, and western Finland, with remnants of the population restricted to the northern and eastern parts of the country. By the late 1960s, the number of bears started to increase again, from about 150 bears in 1970 to 450 in 1985. The species also extended its range into the western and southern parts of the country. The first reproducing females were observed in central Finland in the late 1980s, and in the western and southern parts of the country in the early 1990s (Pulliainen 1990; Kojola/Laitala 2000). The bear population in Finland was estimated at 2,300–2,500 individuals in summer 2020 (Heikkinen et al. 2021). Most of the bears in Finland live along the Russian border, and immigration of bears from the Russian part of Karelia explains much of the growth and range expansion of the bear population in Finland, in spite of relatively high harvest rates (Pulliainen 1997; Saarma/Kojola 2007).

The Swedish management system for brown bears is knowledge-based, rather well informed, and is required by law to be adaptive, although that does not always seem to be the case (Swenson et al. 2017). It includes monitoring of the population size and distribution, as well as of human attitudes, in addition to subsidies for measures to prevent depredation on livestock, a system for damage compensation payments, and stakeholder involvement in decision making. The elaborate system for the monitoring and management of large carnivores is in part due to the compensation system for damages to domestic reindeer (*Rangifer tarandus*). Wild reindeer became extinct in Sweden in the 1800s, but today there are about 350,000 domestic reindeer owned by native Sámi people. In accordance with the rules and regulations of the European Union, limited hunting of brown bears is allowed in Sweden as a measure to prevent agricultural damages.

The Swedish Environmental Protection Agency (EPA) is the national authority for nature conservation and environmental issues. The EPA advises the Swedish government on these issues and provides instructions, advice, and information on large carnivores to regional authorities and the public. The EPA puts much effort into the management of large carnivores, including policy tools (legislation), guidelines and strategies, funding (for regional administration, surveillance, research, and information), and issuing hunting permits.

Sweden is subdivided into 21 counties, each with its own administration. The County Administrative Board is a regional authority that is a link between the people and municipalities of the county on the one hand, and the government, Parliament, and national authorities on the other. Environmental issues, such as wildlife management, large carnivore conservation, and reindeer husbandry constitute a major field of work for the county boards. For example, about 20 people are involved in large carnivore management in Västerbotten County, working on topics such as population monitoring, managing hunting, damage compensation, and public information. Regional stakeholder involvement is achieved by so-called Delegations for Game Management at the county boards. They consist of regional politicians and representatives of different interest groups affected by or interested in large carnivores. Delegations for game management give advice to county boards and are charged with making overarching decisions regarding the management of game species in the county (Lundmark/Matti 2015; SFS 2009:1474).

Furthermore, Sweden is subdivided into three areas for the management of large carnivores (Fig. 3). These zones were established to increase and improve the cooperation among the counties and to facilitate cross-boundary management. Within a management area, counties are similar with respect to species composition and population sizes of the carnivore community. They are also comparable regarding human population density and landscape use, as well as types and extent of human-carnivore conflicts. Between management areas, differences in the aforementioned factors are relatively large. The northern management area contains a large population of brown bears and almost the entire reindeer husbandry zone. The central management area contains good numbers of bears, but few reindeer. In the southern area, bears are absent (Schneider 2017).

Monitoring size and trend of bear populations

The population size and trend of brown bears in Sweden are estimated based on a combination of genetic and observational methods. Together, these methods provide a very good overview of the dynamics and spatial distribution of brown bears in Sweden.

DNA-based methods are used to estimate population size (Bellemain et al. 2005; Bischof et al. 2020). Brown bear DNA surveys are usually carried out at five-year intervals in all counties with bears. The management authorities provide sampling kits, and volunteers, commonly hunters, are asked to collect a small sample whenever they find bear feces. These samples are then sent to a desig-

nated laboratory for analysis. The lab results are used to estimate the population size of brown bears at the county, as well as the national, level based on statistical capture-recapture models (Schneider 2006; 2015).

The trend of the brown bear population is monitored annually at the county level using effort-corrected observations of bears by moose (*Alces alces*) hunters (Kindberg et al. 2009). Every autumn, thousands of hunters are in the Swedish forests to participate in moose hunting. Most of the hunters are organised into hunting parties, i.e. groups of people hunting together in an area that they own or lease (Schneider 2017). Hunting parties are required to keep track of bear sightings during moose hunting and to report their results to the Swedish Hunters' Organisation (Kindberg et al. 2009). Based on these data, an annual index of bear sightings per observation effort is published for every county with a bear population. Because the visibility of bears varies among years, due to weather conditions and other factors, and among areas, due to differences in forest density, etc., this index only indicates the trend of the bear population in a given area. Together with results from DNA surveys, trends from observation indices can be used to estimate bear population size in the counties in different years (Kindberg et al. 2011).

Framework for bear management

The brown bear is considered to be "Near Threatened" in the Swedish Red List (Artdatabanken 2020), based on criterion D of the International Union for the Conservation of Nature (fewer than 2,000 reproducing individuals). Article 11 of the European Union Habitats Directive requires member states to monitor the habitats and species listed in the annexes, and Article 17 requires a report to be sent to the European Commission every six years. The core of this Article 17 report is an assessment of the conservation status of the habitats and species targeted by the directive. Conservation status is assessed using a standard methodology as being either "favourable", "unfavourable-inadequate" or "unfavourable-bad", based on four parameters as defined in Article 1 of the Directive. The parameters for species are range, population, habitat of the species, and future prospects (DG Environment 2017). According to the Article 17 reporting by the Swedish EPA in 2019, the reference population size for the brown bear is 1,400 individuals (Naturvårdsverket 2020). That means that at least that many bears must live in Sweden, but the population can be much larger, as long as it does not cause too many problems. Today, the brown bear has favourable conservation status in both biogeographical regions in which it occurs in Sweden (alpine and boreal).

The main goal of the management of large predators in Sweden is stated in Section 1 of the Ordinance on the Management of Bear, Wolf, Wolverine, Lynx and Golden eagle (SFS 2009:1263); these species should occur in such large numbers that they persist in the Swedish fauna in the long term and that they can spread to their natural areas of distribution. This aim is to be achieved at a pace that promotes the coexistence of humans and these species, while preventing and limiting damages and inconveniences. According to the government's proposition "A sustainable predator policy" (Regeringen 2013), the general and long-term objective is that large carnivores in Sweden shall achieve and maintain favourable conservation status in accordance with the European Union's Habitats Directive, at the same time as livestock husbandry is not significantly hindered and socio-economic considerations are taken into account. In 2018, in its "Strategy for Swedish Wildlife Management" (Swedish EPA 2018), the Swedish Environmental Protection Agency has formulated a vision for wildlife management in Sweden. The vision can be viewed as a long-term objective for Swedish wildlife management and draws on the values of wildlife in a broad sense, for nature experiences and tourism, for hunting, for the provision of game meat, and for the conservation of biodiversity. Everyone should have access to these values, regardless of background, gender, disabilities, or other conditions.

National and regional management plans

The national management plan for the brown bear (Naturvårdsverket 2016) translates the general management principles defined by the Parliament and the government into more concrete objectives and measures. According to the Swedish EPA, the following specified goals should be achieved during 2014–2019, the period covered by the plan: 1) Reach and maintain favourable conservations status; 2) Reduced damage; 3) Increase confidence in management; and 4) No illegal hunting of bears. Sweden joined the EU in 1995, which resulted in the protection of the brown bear. However, bears can still be hunted in Sweden, using the derogations (exceptions) allowed in EU's Habitats Directive, which are implemented in national Swedish legislation. The hunting law instituted by Parliament, the hunting ordinance issued by the government, and more detailed regulations from the EPA define bear hunting in Sweden today. Actual decisions on bear hunting are made by county boards at the regional scale, after input from their Delegation for Game Management.

Within the three management zones, county boards cooperate on different aspects of large carnivore management. These include common guidelines and quotas for management removals of problematic animals, justification of and quotas for license hunting, models for administrative routines, collaborative suggestions for county-wise minimum levels, and the production of regional management plans. According to section 7 in the Ordinance for the Management of the Bear, Wolf, Wolverine, Lynx, and Golden eagle (SFS 2009:1263), each county board must establish a regional management plan for large carnivores. Management plans describe the general conditions in the county and assess the basis for large carnivore occurrence. They also describe numbers and distribution of carnivores, the conservation status of the predators, their effects on prey species, the problems they cause, and their socioeconomical consequences for society. Most importantly, regional management plans include concrete objectives for population size and distribution of the species, as well as acceptable levels of problems and inconveniences that carnivores inflict.

Bears in Sweden occur mostly in the six northernmost counties, Norrbotten, Västerbotten, Jämtland, Västernorrland, Gävleborg, and Dalarna. Table 1 summarises minimum levels, management targets, and limits of management intervals for the brown bear in these six counties. Minimum levels sum up to 1,400 bears, which has been defined as the national reference value, i.e. the national minimum level for the population.

Hunting of bears in Sweden

Bears are protected by the EU Habitats Directive (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora), but exceptions can be made, and bears can be killed if the objective of the hunt is to prevent serious damage and there is no satisfactory alternative to solve the problems. In addition, killing bears must not be detrimental to the maintenance of the population at a favourable conservation status in its natural range, at neither the regional nor the national scale.

Two types of bear hunting exist in Sweden, license hunting and protective hunting. License hunting aims at regulating populations by managing the density, size, and growth rate of these populations. It operates at large spatial scales and multi-year time frames, and it is an important and fundamental component in the management of large carnivores in Sweden. Any person who has passed a hunter's exam and purchased a general hunting permit from the EPA can take part in license hunting of bears in areas where he or she has the right to hunt and where the hunting of bears is allowed. There is no governmental fee for killing a bear, but private landowners can sell the possibility to hunt, within the hunting quota that has been set by the county board. Most of the bears are killed by specialised hunters using dogs, many are shot during still hunting (also by people sitting and waiting for moose), some bears are killed by hunters stalking them, and very few by hunters using baits (Bischof et al. 2008; Swenson et al. 2017; Zedrosser et al. 2020). In northern Sweden, license hunting is a well-founded

and planned management effort and an inclusive phenomenon, where reindeer herders and local people can work together for mutual benefit, where bears can be an appreciated resource for hunting instead of being pests, and where the socio-economic and psychosocial impact on reindeer husbandry and other parts of society decreases, at the same time as hunting can generate income for local people. Managers argue that the acceptance for bears as well as large carnivore management increases because of that (see Dressel et al. 2021).

The other type of hunting is termed as protective hunting, i.e. management removals. County boards can grant permits for the lethal removal, i.e. killing of bears, when people who experience problems apply for it. Such applications are relatively rare in central Sweden, but quite common in the northern half of the country, where bears can cause serious damage to young reindeer on calving grounds in spring. A permit to kill a bear, if granted, is usually given to the person applying for it, but if this person does not want to hunt, he or she can ask other hunters to remove the bear. In remote mountain areas, when bears kill reindeer calves in spring, the carnivores often are removed by county board staff using helicopters. Protective hunting of problematic carnivores is an administratively extensive measure, it is usually event-driven (i.e. not planned in advance), it is usually costly, it can be controversial, and it has only a short-term effect within a limited area. In addition, management removals often exclude local hunters, and they reduce opportunities to use the bears as a resource, as the animals that are killed have usually been confiscated by the authorities.

Overall, about 350 bears are shot every year in Sweden. This is far more than were killed in the second half of the 1800s, when the bear nearly was eradicated (cf. Fig. 1). Although authorities welcome the huge interest among hunters, some recent developments in hunting practices are questionable. Hunting quotas are filled increasingly rapidly, which according to Police officials is facilitated by automatic cameras, technical equipment for tracking hunting dogs, motorised vehicles, and illegal bait sites, which some hunters use. Bear hunting has very much become a race between specialised bear hunters with trained hunting dogs, the most successful of which have killed more than 40 bears each. Also, there are indications that the selling of guided hunts is increasing rapidly in Sweden. Baiting for hunting bears was banned in Sweden in 2001 but was allowed again in 2014. Especially in Jämtland County it has become very popular, but only few bears are shot at bait sites (Fig. 4). The character of bear hunting is changing in Sweden, and the manager-caused mortality of bears has increased greatly (Fig. 5). In 2020, unusually many bears were killed on reindeer calving grounds in the spring (see the case study from Västerbotten County, below, for further details).

Bears and people in Sweden

Bear attacks on livestock

Although the bear population is relatively large in Sweden, attacks on livestock (other than reindeer) are comparatively rare, especially when compared to the number of attacks by wolves and lynx (Fig. 6). There are approximately 600,000 sheep, 350,000 dairy cattle, and 1.5 million beef cattle in Sweden. Most depredation cases by bears involve sheep. The number of attacked sheep per bear is much lower in Sweden than Norway, despite the higher numbers of bears (Table 2). There are three main reasons for the low number of bear attacks in Sweden compared to Norway. First, there are relatively fewer farms with sheep in the main area of brown bear distribution in Sweden, although most sheep in Norway also are outside of the bear range. Second, sheep are usually kept within areas protected by electric fences in Sweden. Third, animal welfare legislation in Sweden requires livestock to be visually observed at least once a day. In comparison, Norway has more than two million sheep grazing freely and unsupervised throughout the country. Unattended, free-ranging sheep are an easy prey for any bear in the area. The result is that Norway pays 210 times more in compensation for lost livestock and preventive measures to protect livestock per bear than Sweden, and 138 times more for compensation alone per bear than Sweden. Finland pays ten times more for compensation per bear than Sweden (Bautista et al. 2019).

Over the last 20 years, there has been an increasing trend of bear damages to beehives in Sweden. However, bear attacks on beehives are relatively easy to prevent with electric fencing, and financial assistance is available from county boards for setting up fences to deter bears. If attacks happen anyway, monetary compensation to replace damaged equipment and bees can be paid by county boards.

Bear attacks on people

The Scandinavian brown bear is not particularly dangerous. Very few people actually meet bears in Scandinavia, and the risk of being injured by bears while engaging in outdoor activities is exceedingly low (Støen et al. 2018). Several factors influence the risk of bear attacks on people. These are, in decreasing order of importance: the presence of cubs, proximity to a carcass, proximity to a den, and the presence of a dog (Swenson et al. 1999). Bear physiology at denning, which makes bears more prone to stay than flee, may make encounters with bears riskier in the fall, when they prepare for hibernation. In Scandinavia, although attacks on humans are relatively rare, injuries from bear attacks have increased during the last decades and fatalities have been documented for the first time for more than 100 years. During a period of 40 years (1977–2016), 44 attacks occurred in Sweden and Norway, in which 42 people were injured and two were killed. During the same period, 26 attacks occurred in Finland, in which 25 people were injured and one was killed (I. Kojola, unpublished data). Victims of bear attacks in these three countries are mostly hunters, and the risk of hunters being attacked increases with bear population density in the area. Hunters are more commonly affected by bear attacks compared to other groups of outdoor users or recreationists. A fatal incident in Sweden in 2004 has resulted in information campaigns and annual hunting courses, which focus on bear behaviour and on safety issues during bear encounters (Støen et al. 2018).

People's attitudes towards bears in Sweden

The relationship between people and large carnivores is multi-faceted. Among other things, human attitudes depend on the levels of predator damage to dogs, livestock, reindeer and game animals, on actual or perceived threats to humans, and on levels of local involvement during decision making processes in relation to bears with problematic behaviour. Many people have strong feelings towards large carnivores. Often, it is not the predators that are problematic per se, but the underlying cause is a conflict between a central administrative institution and the countryside community, a conflict that may exist at several scales. People's feelings and attitudes must be taken seriously when managing large carnivores (Schneider 2008).

Thoughts and actions

A multitude of attitude surveys regarding large carnivores have been carried out in Sweden. Since 2004, these surveys have been done at a large scale every five years, encompassing mostly the northern half of Sweden (Ericsson/Sandström 2005). Results from these surveys show that an overwhelming majority of the people is supportive of both large carnivores and their current management, however, many of the people who live closest to the carnivores are negative, and over time, people's support for large carnivores and large carnivore management can fluctuate. This is true especially for wolves and bears (Sandström/Ericsson 2009; Sandström et al. 2014; Dressel et al. 2021). These are important findings for managers, as negative attitudes may result in illegal killings of large carnivores. According to Swenson et al. (2011), illegal killing of bears is low, but more common in the northern part of Sweden; annual rates of illegal mortality among adult females was estimated to be less than 1 % in the south, but 2–3 % in the north. Documented and suspected illegal deaths showed no seasonal trend in the south, but were concentrated to spring and autumn in the north. In the north, illegal mortality has been documented to be especially high in the mountain national parks (Rauset et al. 2016). Generally, illegal killing does not seem to affect population trends among brown

bears in Sweden, but may be important locally. The level of illegal killing appears to be stable and not related to the level of legal hunting. Therefore, mortality caused by illegal killing is probably additive to the mortality caused by legal hunting.

Bears both repel and attract people

Although many people in Sweden seem to be afraid of bears (Dressel et al. 2021), attitude surveys show that most people like the fact that bears occur in the country. After the lynx, the bear is the second most popular species of all large carnivores in Sweden. However, the popularity of the bear decreased between 2004 and 2009, but it increased again between 2014 and 2020. Most people do not like the idea of meeting a bear in the forest (Dressel et al. 2021). However, if bears expose themselves along roads or on fields in the spring, many people will come to watch them. Bears are the object of human curiosity, as long as observing them can be done from a safe distance, and many people can congregate around such bears.

Case study: Bear predation on reindeer calves in Västerbotten – immobile hunters, scarce herders, and climate change increase bear predation on reindeer calves

Västerbotten is the second largest (55,000 km^2) and second-most northerly county in Sweden (Fig. 7). The county stretches from the coast of the Bothnian Bay in the east up to almost 1,800 m above sea level in the mountains along the Norwegian border in the west. The climate varies considerably between different parts of Västerbotten, but generally it is characterised by cold winters with heavy snow. More than 50 % of the county is covered by forest, which is intensively used by large-scale forestry. Most of Västerbotten's about 273,000 inhabitants live along the coast in the east, where the biggest cities are located. Human population density decreases steadily from east to west, with few inhabitants in the forested inland areas and especially so in the mountain range. Most Sámi reindeer herders live in the central and western parts of the county. Today, reindeer herding is not economically rewarding, and in many Sámi families only one person works fulltime with reindeer (Sjölander et al. 2009). As a consequence, there are few people guarding reindeer in the woods and mountains.

The bear population

The number of bears in Västerbotten has been estimated four times, in 2004, 2009, 2014, and 2019. The latest survey revealed a population of about 450 animals in autumn 2019. In recent years, the annual rate of harvest has been about 10 % of the population, but the number of bears has increased, nevertheless. The distribution of bears is uneven, especially so for females, which mostly occur in the southern and northwestern parts of the county. Most males occur in the central parts of Västerbotten, but densities are low in the mountains and in the coastal areas. In 2020, 73 bears are known to have died in the county, and with few exceptions, they were shot during protective or license hunting. During most years since 2005, there has been a special hunting quota for the Västerbotten mountain range, or more precisely the area between the Norwegian border and the *odlingsgränsen*, a border which was legally defined in 1890 as the western (upper) limit of new habitation in order to secure the higher altitudes for Sámi domestic reindeer herding (Lundmark 2006). Most of Västerbotten's calving grounds for reindeer are situated in this area.

Bears kill reindeer

For many years, reindeer herders have identified bears as a big problem on reindeer calving grounds in the spring. During 2010–2012 a study of bear predation on reindeer calves was conducted by the Swedish Wildlife Damage Center and the Scandinavian Brown Bear Research Project in cooperation with two reindeer herding cooperatives in northernmost Sweden (Karlsson et al. 2012). The research showed that the average bear kills and eats eleven reindeer calves during the calving season

in May and June, but that there are big differences among individual bears and between years. The researchers also studied different measures to protect reindeer calves from bears, and they concluded that hunting bears is the most effective measure.

Inspired by traditional Sámi knowledge, the Västerbotten County Administration established three management zones for brown bears in 2005 (Schneider 2006). In Västerbotten, most reindeer calving grounds are situated in the mountains close to the Norwegian border. Therefore, few bears should occur in this region, and the objective was to regulate the population by targeted hunting quotas in the area. Hunting quotas were set, based on the results of bear population size surveys.

Finding bears

Bear surveys to determine population size are organised as citizen science projects by the County Board in cooperation with the regional branch of the Swedish Hunters' Organisation. Sampling equipment for bear scats is distributed to hunters, reindeer herders, hikers, and other people working or relaxing in the outdoors, but the participation is voluntary. The survey period starts on 21 August (the onset of the bear hunting season) and ends on 31 October. Most bear scat samples are collected by hunters while they are hunting moose. Many samples are collected on or close to forest roads, presumably because they are easier to find there and because many hunters and berry pickers do not go very far from roads. In most cases, the calving grounds of reindeer and surrounding lands are rather remote areas that lack a dense network of roads. In consequence, during bear population size surveys, only few scat samples are collected in these areas. Reindeer herders move often off-road, but several of them have declared that they are unwilling to collect bear fecal samples.

An unfavourable spring

When the reindeer herds reached the mountains during their traditional spring migration in 2020, they could not reach their traditional calving grounds at higher altitudes due to large amounts of snow. Instead, they had to stay in the forests of the foothills and wait for the snow higher up to melt. Consequently, the calving season started when the reindeer still were at these lower altitudes, and great numbers of pregnant reindeer and newborn calves were in the area when bears started to emerge from hibernation. Neonatal reindeer and moose calves are preferred food of Scandinavian bears in spring, and the damage inflicted to reindeer herding was massive. In response to the problematic situation, the Västerbotten County Board granted about 50 licenses for protective hunting of bears, and 43 bears were shot.

Outraged hunters

The Swedish Hunters' Organization had a media campaign against the county boards and the bear management in northern Sweden, which according to hunters is a total disaster. They claimed that bears should be shot by hunters during the ordinary hunting season in autumn, as a valuable natural resource for sport and recreation, not as vermin by state officials in spring.

In summary

According to the management plan for the brown bear in Västerbotten, there should be few bears in the mountains, to avoid that bears prey on reindeer calves. Therefore, special hunting quotas were set for this area, based on the results of bear population size surveys, which require that hunters collect samples in the entire county. However, as there are relatively few roads in the mountains, hunters only collected samples in easily accessible parts of the area. Most reindeer herders did not participate in the bear population size monitoring, except in the southern part of the Västerbotten mountains. Therefore, relatively few of the bears in the area were detected during the survey, and hunting quotas were set accordingly too low. In most years, such a situation would not have important consequences,

as reindeer calve at higher altitudes, where there are fewer bears; however, the conditions with an exceptional amount of snow in spring 2020 exacerbated the situation and resulted in high bear depredation. The Västerbotten County Board did its best to help by removing many bears but was accused anyway for being utterly incompetent when it comes to bear management.

Management of brown bears in Norway

Human attitudes and political decisions, rather than natural conditions, determine the numbers and distribution of large carnivores today. This is obvious in Norway, where bear numbers have not increased very much since the reappearance of the species in the country in the 1970s. Norway is not a member of the European Union and therefore not directly affected by the EU Habitats Directive. However, Norway has signed the Bern Convention and therefore is obliged to conserve its large carnivores.

Due to climatic constraints, livestock production, especially sheep production, is important in Norwegian agriculture. Subsidies for livestock production are used to promote the goal of a "living landscape", i.e. economic activity in populated rural areas. More than two million sheep, some hundred thousand cattle and about 160,000 domestic reindeer graze freely throughout Norwegian landscapes. As an example of the conflict between farmers and bears in Norway, we quote Strand et al. (2019): "Bear attacks on grazing sheep has been prevalent in Norway […]. Bears are large, unpredictable, and occasionally violent and therefore represent a threat that the farmers are unable to cope with. Bears can damage carnivore-repellent fences and the damage inflicted on a herd attacked by brown bear is often substantial with many animals killed. The CMZ (carnivore management zone) for brown bear is found in regions where livestock farming is particularly dependent on using outfield resources. Bears are incompatible with free-roaming sheep in the outfields and prevent the farmers from exploiting these resources. Farms in the CMZ for brown bear are small and herds cannot be sustained on their infields alone. The result is that sheep farmers are forced out of business".

Nevertheless, the number of sheep and lambs that farmers received compensation for as killed by bears was only 1,843 in 2019, and 1,054 in 2020 (Miljødirektoratet 2022). The corresponding numbers for domestic reindeer were 347 and 397 in 2018 and 2019, respectively (latest available figures; Miljødirektoratet 2022), although loss of calves is particularly difficult to document. Even if these numbers are not particularly high, the number of bears is low, resulting in Norway (outside of the northernmost province of Finnmark) having the highest number of livestock compensated and greatest compensation cost per bear in Europe, in spite of the second-highest cost of preventive measures per bear (Bautista et al. 2017; 2019). These results highlight the difficulties of trying to conserve bears in an open-range landscape with free-ranging, unguarded sheep.

Management system

Stortinget, the Norwegian parliament, has sought to establish a compromise among stakeholders in the conflict between humans and carnivores. The solution is a political consensus formalised through two parliamentary decisions, the Carnivore Settlements of 2004 and 2011, which seek to reconcile two goals: continued sustainable livestock production in the outfields (open range) and the maintenance of viable carnivore populations. Through the agreements, national objectives have been set that define how large the populations of the predators are allowed to be. These targets for population size and distribution of large carnivores are so low that all of the species are included in the Norwegian Red List; the brown bear is listed as "Endangered" in Norway (www.artsdatabanken.no).

When populations are above or below the targets, it is the task of the environmental administration to find good tools to move and maintain populations close to the targets. The relevant administration

is the Norwegian Environment Agency (Miljødirektoratet), which is responsible for the management of large carnivores on the national level. It has described the Norwegian management system for large carnivores on its website (Miljødirektoratet 2021).

Thus, the objectives are different than in Sweden, where minimum objectives have been set, with no maximum limits on the national level. Large carnivore management is a field where the instructions from Stortinget and the government are particularly detailed, because of the strongly conflicting interests in Norwegian society. Gangaas et al. (2013) found that the conflict associated with large carnivores in Norway is linked to sheep farming and big game hunting and that people living in rural areas with big game hunting and sheep farming are more likely to accept illegal hunting compared to people living in areas with less rural traditions. They also found that Norwegians were four times more inclined to accept poaching than Swedes.

Stortinget decided that carnivores should be managed at a local scale. Therefore, Norway was subdivided into eight management regions for large carnivores (Fig. 8), and a predefined number of each species of predator can occur in each region. These goals are expressed in annual reproductions for each region and can be zero. Within these regions, some areas are defined to prioritise large carnivores; there the threshold for the removal of animals is higher and preventive measures to protect livestock are more relevant. Outside these areas, livestock grazing on open ranges is prioritised and large carnivores are less welcome. The management in each region is governed by a carnivore committee with members consisting of elected politicians appointed by the Ministry of Climate and the Environment and the Sámi Parliament. They are part of the environmental administration and they are subordinate to the Ministry. Within each region, it is the regional carnivore committee that is responsible for ensuring that the populations of large carnivores are maintained at the level set by Stortinget. One of the tasks of the committee is to determine management zones for lynx, wolverine, and bear as part of the regional management plan for large carnivores. However, Stortinget defined the management zone for wolves. The committees also set harvest quotas when the number of reproductions has exceeded the goal. In the regions where the target has not been met, the Norwegian Environmental Agency retains management authority.

Bears in Norway

The Norwegian brown bear population is the western edge of a larger population in Sweden, Finland, and Russia. Stortinget has decided that Norway should have 13 annual reproductions (litters) of bears in the country, and that these should occur in the four regions bordering Sweden, Finland, and Russia (Fig. 8). In the other four regions, the target number of brown bear reproductions is zero. Management zones have been established in those regions, where bear reproduction is a priority. Outside these areas, grazing animals will be given priority and there is a lower threshold for killing bears.

The national population target of 13 litters of bears per year was adopted in the carnivore settlement in Stortinget in 2011, but it has never been reached (Table 3). In 2021, the target had been reached in two regions (Table 3), so the committees in those regions had management authority over bears in their area. The bear population in Norway is increasing slowly, which in part depends on how the bear is managed in Sweden. In recent years, Swedish counties had a goal of reducing the bear population. Due to conflicts with reindeer husbandry, many bears have been killed in border areas with Norway, and many of the killed bears probably had parts of their home ranges on the Norwegian side of the border. In addition, bears can be killed in the fall by hunters who have obtained a license for bears in areas opened for bear hunting, which are primarily areas where the authorities want to reduce the number of bears and their damages outside of the areas prioritised for bears. In 2019, license hunting was allowed for nine bears in two regions and two bears were killed, one of which was a female. Also in 2019, eleven bears were killed as a response to depredation events in areas where

grazing is prioritised, and two others were known to have died (one killed by a train and one died of unknown causes). Thus, 15 bears are known to have died in Norway in 2019 (www.rovbase.no).

In Norway, most brown bears live in the border areas with Sweden, Finland, and Russia. The individuals that have been detected further inland are mainly young males on the move. The female bears in Norway live mostly close to the border; there are relatively few established adult females in the country.

Monitoring

The administration is dependent on accurate data on population size and distribution to follow up the very detailed goals in the large carnivore policy. The institution Rovdata, which is part of the Norwegian Institute for Nature Research (NINA), is responsible for the national monitoring program in Norway, which is part of the joint monitoring of large carnivores in Scandinavia. The Norwegian Nature Inspectorate (Statens naturoppsyn, SNO) is responsible for monitoring in the field and delivers bear excrements and hair collected annually from bears throughout the country to Rovdata. Every year, about 1,500 samples are analysed genetically, which allows the determination of the minimum number of bears in Norway, to follow the same individuals from year to year, and to map spatial use over time, and the distribution of males and females.

Because Stortinget has set a goal of 13 litters to be born in Norway each year, the monitoring scheme is aimed at determining how many reproductions occur annually. However, it is difficult to document females with young of the year for several reasons. When the female leaves the den with her newly born cubs for the first time, the snow, which is crucial for tracking the individuals, is often already gone. It is also hard to distinguish between large young of the year and young from previous years, and many young may not be seen or reported.

Therefore, managers use a model, developed by the Scandinavian Brown Bear Research Project, to calculate the number of reproductions each year (Bischof/Swenson 2012; Table 3). The method is based on several parameters: current results from DNA analyses in Norway, age and sex distribution in the Swedish bear population, time between litters and age at first reproduction, home range sizes, and mortality risk. The parameters are then adjusted in relation to differences between Sweden and Norway, before the probable number of litters in Norway is calculated.

Management in Finland

In contrast to Norway and Sweden, where management of the brown bear population is decentralised, Finland manages the brown bear on the national level. The main goal of the management plan for brown bears in Finland (2007, updated in 2016) is to pursue ecologically, economically, and socially sustainable population management. The brown bear is considered a game species according to the Finnish legislation, and the Ministry of Agriculture and Forestry of Finland (MAFF) is responsible for its management. The population size increased greatly from ~200 bears in the 1970s to ~2,400 in 2020, i.e. by a factor of 12, and it is regulated mostly by recreational hunting. The annual bear population growth rate since the 1970s was substantially higher outside the reindeer husbandry district (0.07) than inside the district (0.02; Kojola et al., unpublished data).

The Finnish Wildlife Agency is responsible for the execution of the management strategy proposed by the MAFF as well as the handling of applications for bear hunting licenses, which are required to hunt bears outside of the reindeer husbandry district. Bear hunting quotas in the reindeer husbandry area are set on a regional level (eastern and western region), and no personal hunting licenses are required.

Finland is divided into four brown bear management zones, i.e. the reindeer husbandry zone in the north, the stable population zone in the east, the bear dispersal zone in central Finland, and the zone for a developing population in western Finland. Bear population densities decrease from the east to the west, and the proportion of females killed during bear hunting is lowest in northern Finland (Kojola et al. 2020). The MAFF sets annual harvest quotas for provinces and management zones, based on population estimates and harvest scenarios provided by the Natural Resources Institute of Finland (LUKE), also considering damages caused by bears. Stakeholder groups are provided the opportunity to comment on a proposal for the size of the annual bear hunting quota prepared by the MAFF.

The Finnish Wildlife Agency may also approve licenses to kill problem bears beyond the quota. The Finnish Police Department has a network of trained hunters that can be used to deter or remove individual problem bears that may pose a risk to human safety in residential areas. The Police may also use hunters to remove bears that have been wounded by hunting or injured in traffic accidents.

The bear harvest scenarios are developed by LUKE, based on a Bayesian model that estimates sustainable harvest rates and the associated uncertainty, based on the annual rates of growth and mortality in the population (Heikkinen et al. 2021). Separate harvest scenarios are produced for the reindeer husbandry district and for the area outside the reindeer husbandry area. The most probable sustainable harvest rate estimates in these population models for recent years have been strikingly high (14–17 % of pre-hunt estimates), which is probably possible due to a high bear immigration rate from neighbouring Russia, where population densities are high and harvest rates comparatively low (I. Kojola/K. Tirronen, unpublished data).

Population monitoring

Every spring, LUKE prepares a bear population size estimate of the pre-hunt season (autumn) of the previous and the ongoing year. Separate population size estimates are produced for 15 provinces and four bear management zones (Heikkinen et al. 2021). The data that are used as basis for these population size estimates are collected by a network of ~2,000 volunteers, most of them hunters. This process can be considered "advanced citizen science", because these volunteers have received training to prepare them for their role as citizen scientists and data collectors. The data on observations of brown bears and other large carnivores collected by these volunteers are uploaded via a link into the online observation data base "Tassu" ("Paw" in English; Kojola et al. 2018). Each observation is attributed with geographic coordinates, date, the type of observation (sighting, track, picture, etc.). More than 10,000 observations are collected annually by this volunteer network. The main focus in the annual population size estimation is on observations of females with cubs of the year (i.e. offspring born in the current year); observations are separated based on the width of footprint of a front paw, and the body size of the dependent offspring is used to differentiate between litters consisting of cubs of the year or yearlings (i.e. offspring born in the previous year). A distance criterion (Ordiz et al. 2006) is used to differentiate between different females with litters of cubs of the year. The population size estimates based on the volunteer network have been shown to correspond well with the ones based on non-invasive genetic sampling, where samples are taken without affecting the bears in any way, e.g. from scats.

Damages and compensation

About 13 % of Finland's bear population live in the area reserved for the management of domestic reindeer (Heikkinen et al. 2021). Most damages by bears are concentrated in this zone, which covers ~36 % of the area of Finland. For example, on average 650 reindeer were reported as killed by bears annually in this area during 2010–2019. Only a small fraction of these kills is actually examined by communal authorities in the field to confirm that the reindeer had been killed by a bear, but most of

these kills are compensated for by the Finnish government. Compensation is only paid for reindeer that are older than one year. Reindeer herding cooperatives (n = 56) are classified into different categories by the number of reported kills by carnivores. The category and herd size determine the sum of money paid for the compensation of calf loss.

South of the reindeer husbandry area, in total bears usually destroy only a few dozen beehives and kill a few dozen of sheep annually. In addition, there are about 100–200 reports every year of bears damaging hay bales or feeding on agricultural crops, especially oats or fruits, such as strawberries. All such types of damages are fully compensated by the Finnish government.

Current cooperative management in Fennoscandia

The management systems in Norway and Finland are rather similar to Sweden, but objectives for carnivore population size and distribution differ widely between countries. However, because these countries share the same population of bears, cross-border collaboration in research, management, and the sharing of information is well established (Table 4).

Where to go from here in Sweden

At least in Sweden, the management system for all large carnivore species is strongly affected by never-ending discussions and controversies about the wolf. During the last 20 years, several changes to the management system were made to accommodate the needs of county boards and different stakeholders in the relatively small counties with wolves in central Sweden. Changes were not always positive for the huge counties in northern Sweden, and it was difficult to have long enough phases of uniform management in between changes, to be able to thoroughly evaluate management actions and different measures that had been applied.

Currently (May 2022), the Swedish government aims at changing the system again, by removing the county-wise minimum levels for population size, at least for the wolf. If this is done, presumably it will become more difficult for county boards to defend large population sizes of carnivores against opposing views in the delegations for game management, where influential stakeholders argue intensively for increased hunting and smaller populations.

Furthermore, the Swedish EPA is currently doing a major revision of the regulations for the hunting of large carnivores. Some of the proposed changes can alter bear hunting tremendously, especially when it comes to the use of baits. Not very much, however, is done against the hurried way in which bear hunting is conducted these days.

In 2021–2022, the Swedish EPA also revises the national action plans for brown bear, wolf, wolverine, and lynx. There are several ideas of submitting assignments to the Scandinavian Brown Bear Research Project and other researchers to compile information on different topics, and of providing funding for the extension of existing studies and for the start-up of new research. The wealth of new knowledge that hopefully will be produced will inform decision making and benefit the future management of the brown bear in Sweden.

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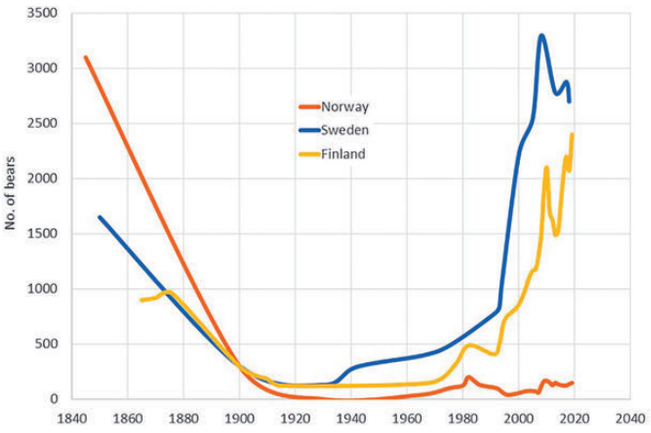


Fig. 1. Population dynamics of brown bears in Norway, Sweden, and Finland between c. *1850 and 2019, compiled from a variety of sources.*

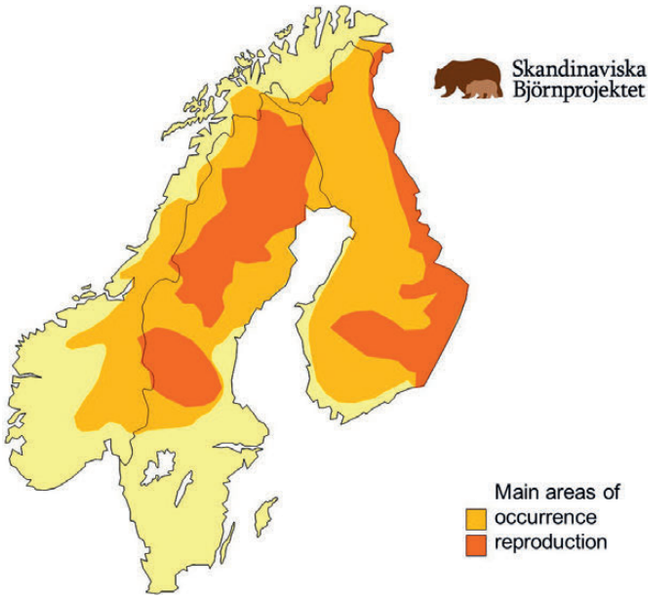


Fig. 2. Current distribution of brown bears in Norway, Sweden, and Finland (map compiled by the Scandinavian Brown Bear Research Project).

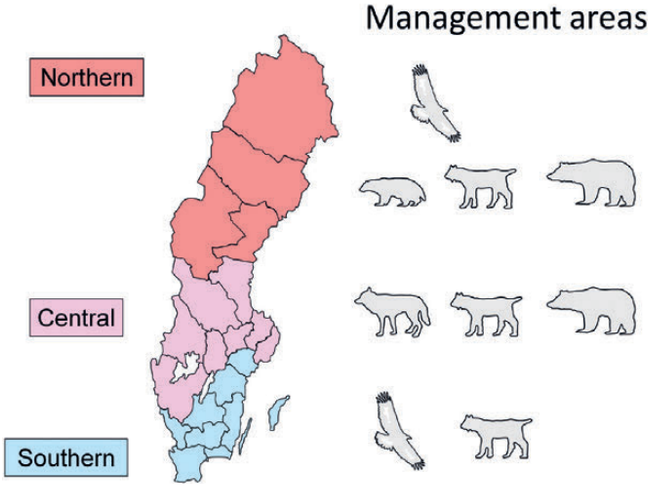


Fig. 3. Occurrence and density of large carnivores (brown bear, wolf, lynx, wolverine, and golden eagle) are different in the three management areas for the species in Sweden. Each area is subdivided into counties, the most important units for carnivore management (after Schneider *2017).*

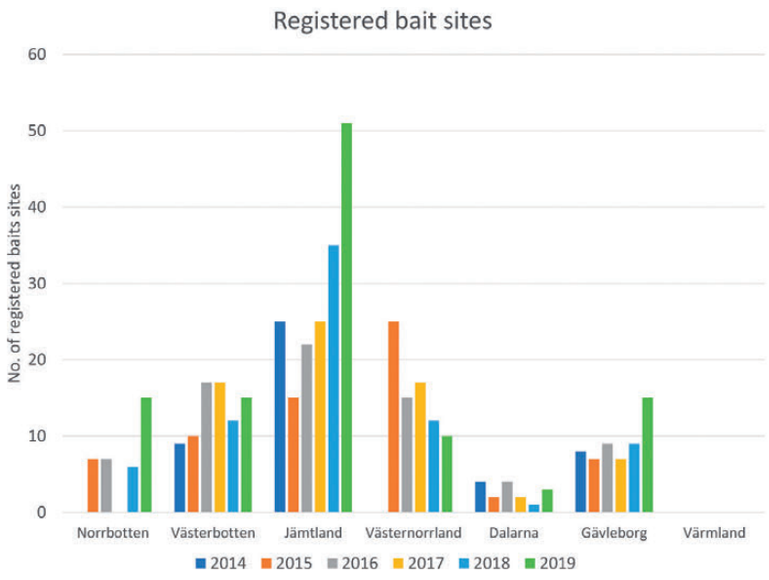


Fig. 4. Baiting for hunting of brown bears had been banned in Sweden in 2001 but was allowed again in 2014. Especially in Jämtland County it has become very popular since 2014 (after Zedrosser *et al. 2020).*

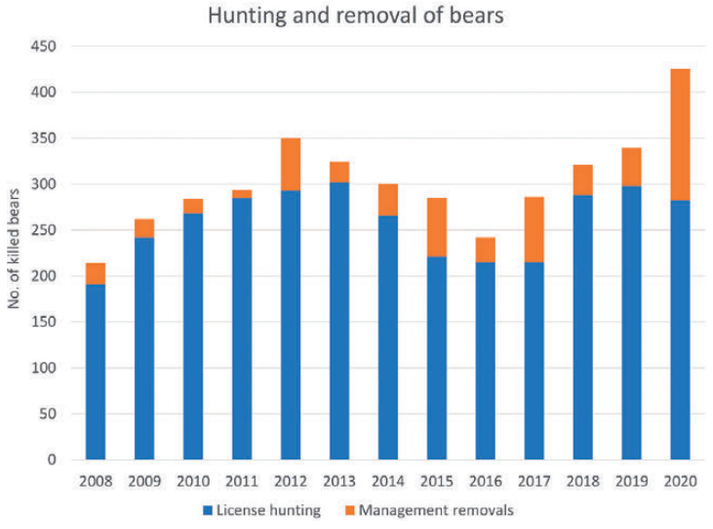


Fig. 5. The number of bears killed in Sweden during license hunting and management removals, respectively (after data from the Scandinavian Large Carnivore Database Rovbase: www.rovbase.se).

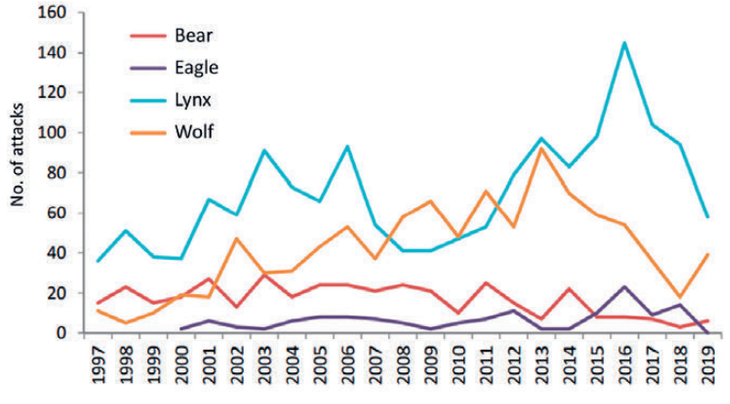


Fig. 6. Attacks by large carnivores on livestock in Sweden during the period 1997–2019. Brown bears cause relatively few problems, and the trend is decreasing (after Frank *et al. 2020, adapted).*

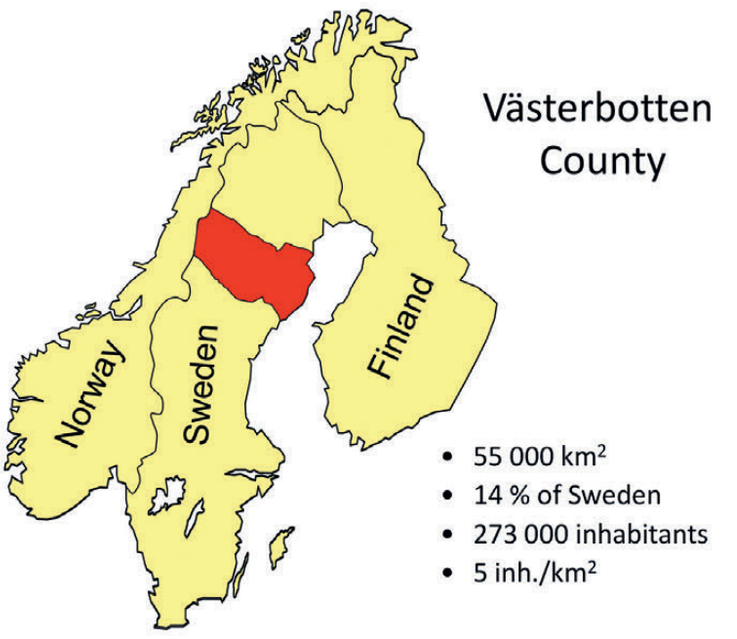


Fig. 7. Västerbotten is the second most northerly and second largest county in Sweden. The human population density is low, and most people live along the coast in the eastern parts of Västerbotten. The entire county is situated within the area of reindeer husbandry in Sweden (map M. Schneider).

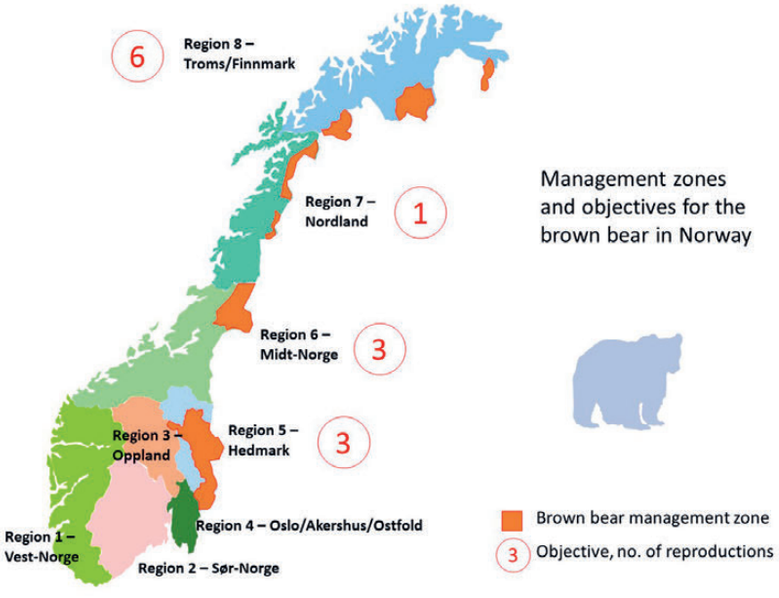


Fig. 8. Norway is subdivided into eight large carnivore management regions. The four northern-most regions have defined management areas for the brown bear and goals for the number of reproductions per year (after a map from Stortingmelding *2016, adapted).*

Table 1. Minimum levels, management targets, and limits of management intervals for the brown bear during the period 2014–2019 in the six northernmost counties in Sweden, where bear populations are rather large. Figures express the number of individuals.

	Norrbotten	Västerbotten	Jämtland	Västernorrland	Gävleborg	Dalarna	Sum
Upper limit	910	432	800	220	460	290	3,112
Target	820	350	650	200	381	270	2,671
Lower limit	730	288	500	180	300	250	2,248
Minimum	330	110	360	100	250	250	1,400

Table 2. Comparison of the number of sheep compensated for as killed by brown bears in Norway, Sweden and Finland in 2020 (after data from the Norwegian Environment Agency [Miljødirektoratet 2022], the Scandinavian Large Carnivore Database [Rovbase 2022], and the Finnish Wildlife Damage Registry [MMM/Riistavahinkorekisteri 2021]).

	No. of sheep compensated	Approximate no. of bears	Compensated sheep per bear
Norway	1,054	150	7.027
Sweden	11	2,700	0.004
Finland	123	2,400	0.051

Table 3. The national objective for the number of litters born in Norway is the sum of the regional objectives in the four northern large carnivore regions. The status in 2020 met the objective in two regions. See text for further explanations (after Fløystad et al. 2021).

Large carnivore region	County	Objective (litters born per year)	Status 2020 (litters born)
Region 5	Hedmark	3	3.1
Region 6	Møre og Romsdal and Trøndelag	3	2.9
Region 7	Nordland	1	0
Region 8	Troms og Finnmark	6	2.5
Norway		13	8.5

Table 4. List of currently active bilateral and trilateral agreements relating to cooperative management of large carnivores in Fennoscandia, i.e. Norway, Sweden, and Finland.

Year	Agreement
2011	Agreement between the Ministry of Environment, Sweden, and the Ministry of Environment, Norway, on management of genetically important wolves in the Scandinavian wolf population. 12 August 2011.
2012	Memorandum of Understanding regarding the establishment and continuance of a public web-based database (Skandobs) for geographic information on large carnivore observations in Norway and Sweden (Norwegian Institute for Nature Research and Swedish Environmental Protection Agency). 25 March 2012.
2012	Memorandum of Understanding regarding management strategies for the Scandinavian wolf population (Norwegian Directorate for Nature Management and Swedish Environmental Protection Agency). 25 April 2012.
2015	Memorandum of Understanding regarding the establishment and continuance of a monitoring system for large carnivores in Sweden and Norway (Norwegian Environment Agency and Swedish Environmental Protection Agency). 25 March 2015.
2020	Tri-lateral framework document for transboundary cooperation on management and conservation of wolves in Fennoscandia (Ministry of Agriculture and Forestry of Finland, Norwegian Environment Agency, Swedish Environmental Protection Agency). September/October 2020.

Genetics of brown bears in northern Europe

By Alexander Kopatz

Keywords: Brown bear, genetic structure, mitochondrial DNA, noninvasive genetic sampling, phylogeography, population monitoring, Ursus arctos, *Y chromosome*

Abstract: From the dawn of wildlife genetics, brown bears in Scandinavia have been studied using molecular genetic methods and hence have been substantial in the development of these methods, which are now the gold standard in DNA-based monitoring of many wildlife species. This chapter introduces the constantly evolving field of DNA-based assessments to monitor and to study the history of brown bears. Genetic studies enable us to understand better past processes, such as the recolonisation after the last Ice Age, and present status, such as migration, and other factors influencing brown bear populations in the north of Europe.

Genetics and the development of DNA-based population monitoring

Genetics is the study of heredity and how an organism's genes are associated with the environment it is living in. The genetic variability or genetic diversity of a species and/or a population is essential for its adaptability to e.g. changing environmental conditions and therefore its viability and long-term survival (Frankham 1995; 2005; Lacy 1997; Allendorf et al. 2010). Molecular genetic methods have been crucial for the understanding of speciation and evolution as well as historical and current processes in Ursid biology and distribution. Genetic information helps us understand what may have shaped the brown bear (*Ursus arctos*) population in northern Europe and provides us with knowledge about its past as well as current status.

The development of DNA-technology has revolutionised how we monitor our natural environment and has also helped to improve our knowledge on numerous species, including brown bears. Individual brown bears, as every sexually reproducing species, differ genetically. An individual's genetic profile is unique, except for identical twins. Individuals usually differ in appearance and behaviour, however, these often-subtle differences are challenging to assess by human observers in other mammals. A genetic profile holds valuable information for deeper analyses, especially in comparison with the profiles from other bears, whether in the same region, adjacent areas, or across regional and national borders. Having precise genetic information from individual brown bears enables the assessment of genetic relatedness, which in turn allows addressing important questions concerning their management and conservation.

To obtain genetic information from an individual wild animal, a biological sample, such as tissue, blood, bones, hairs, or feces, must be collected in the field and then genetically analysed in the laboratory. In Scandinavia, brown bears are mainly monitored with the help of non-invasively collected material. Non-invasive sampling means that it is not required to directly have contact with, disturb,

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 99–108 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134327

or capture an animal to collect a biological sample. Instead, DNA is extracted from biological samples left in the field by the individual itself, for example, in the form of feces or hairs. Such samples are routinely collected by wildlife rangers, hunters, and also hikers (Bellemain et al. 2005; Kindberg/Swenson 2018). Individual brown bears are then genetically "tagged" in the laboratory based on their unique DNA-profile; new individuals are identified and already known individuals are genetically "recaptured". Especially the recapture of known individuals is crucial to obtain reliable population size estimates of brown bears. Over the last decade, DNA has become the population monitoring method of choice for wildlife management authorities in Sweden and Norway, and Finland is currently in the process of establishing the same method. Data based on non-invasive collection methods create a solid scientific foundation to estimate the population size of bears in a given area, but also provide additional highly valuable information, such as population distribution, population density, and the sex ratio, i.e. the proportion between males and females in the population, which is important to understand reproduction and the effect of hunting quotas (Bischof et al. 2016; 2020; Kindberg/Swenson 2018).

Feces and hair samples make up the largest part of biological materials collected for DNA analysis of brown bears in Scandinavia. The individuals identified, the date their sample was collected in the field, as well as their location and additional information, are stored and made accessible for the public in the Scandinavian monitoring database "Rovbase" (www.rovbase.no). Besides samples and information on brown bears, this database also contains similar information from other large carnivores collected and analysed via the same methods in Scandinavia (see e.g. Taberlet et al. 1999; Schwartz et al. 2007). The Scandinavian brown bear was the main model species at the dawn of molecular methods for the development, design and quality of the genetic methods used today in the population monitoring of wildlife species on a global scale (Bellemain et al. 2005; Kindberg et al. 2011; Swenson et al. 2011). The improvement of the genetic methods is an ever-ongoing process (Norman et al. 2013; Norman/Spong 2015; De Barba et al. 2017).

Phylogeography of brown bears in northern Europe

In 1994, Taberlet/Bouvet (1994) published a groundbreaking study on the phylogeography of brown bears in Europe based on mitochondrial DNA-lineages of northern European brown bears. The authors identified two different brown bear DNA-lineages, indicating that Scandinavia was recolonised by bears from two different population refugia coming to Scandinavia from two different directions after the last glacial maximum: from the north and the south (Fig. 1a). The Quaternary cold periods of the Pleistocene (2.6 million to 11,700 years ago) generally had great influence on life in Europe. As a result of the Scandinavian Ice Sheet, flora and fauna of the Holocene, the current geological epoche (11,700 years ago to today), experienced range contractions, expansion, and sometimes also extinctions in the northern hemisphere; most species were restricted to refuge areas in the southern parts of Europe. This Ice Age is ultimately responsible for today's composition and distribution of species in northern Europe (Siivonen 1982; Hewitt 1996; Taberlet et al. 1998). Once temperatures were on the rise and ice caps retreated at the end of the last glacial maximum (~22,000–17,000 years ago), animal and plant species followed the retreating ice. The leading edges of these expansion fronts can be characterised by consecutive occurrences of so-called genetic population bottlenecks. A population bottleneck describes the drastic reduction in the number of individuals in a group or population accompanied by loss of genetic variation (Nei et al. 1975). Such bottlenecks, if severe enough, can be traced back in time with modern genetic methods (Hewitt 1996). Radiocarbon-dated bone remains suggest that the brown bear was one of the earliest carnivorous mammals to re-colonise northern Europe at a comparably rapid pace, which was genetically confirmed by haplogroup data

(Hewitt 1999; 2000; Sommer/Benecke 2005; Korsten et al. 2009; Davison et al. 2011). Today, the brown bear still is one of the most important model species to illustrate Late Quaternary mammalian phylogeography and the application of genetic methods.

The first genetic assessment of brown bears in Europe used mitochondrial DNA (mtDNA) with the goal to identify potential conservation units, i.e. areas and populations valuable for the long-term conservation of the species (Moritz 1994). Mitochondrial DNA is exclusively inherited from the mother to her offspring and, in contrast to nuclear DNA, stored in the mitochondrion of all cells in an eukaryotic organism's body, i.e. animal, plant and fungal organisms with cells containing nucleus and nuclear envelope. The analysis of mtDNA is the basis for the tracking of a species' phylogeography, i.e. the historic and genetic processes and patterns across large time scales that have shaped the current distribution of a species (Hewitt 1996). The mtDNA of brown bears from the northern part of Scandinavia was shown to be part of the eastern lineage or clade, which is also characteristic for bears in Russia, Romania, and Slovakia. This suggests that northern Scandinavia was re-colonised by bears from eastern Europe via Russia and Finland. The mtDNA of brown bears from the southern part of Scandinavia was characteristic of the western lineage, which suggests that southern Scandinavia was re-colonised by brown bears which had their Ice Age refugium on the Iberian Peninsula, i.e. the so-called southern clade of bears found in central and southern Europe (Taberlet/Bouvet 1994).

The striking results of this first study inspired a number of follow-up research, which highlighted that these two clades originated from two separated Quaternary refugia in the far west and east of Europe (Fig. 1a–b; cf. Kohn et al. 1995; Taberlet et al. 1995; 1998; Hewitt 1999; 2000; Hofreiter et al. 2002; Sommer/Benecke 2005; Saarma et al. 2007; Zachos et al. 2008; Korsten et al. 2009; Davison et al. 2011; Keis et al. 2013; Xenikoudakis et al. 2015; Anijalg et al. 2018; Ersmark et al. 2019). Further analyses of mtDNA lineages pointed to a Carpathian refuge of the eastern lineage (Fig. 1b; cf. Sommer/Benecke 2005; Zachos et al. 2008). Also, a much higher matrilineal diversity was found in bears in Finland and northwestern Russia compared to the bottlenecked Scandinavian population. This is likely due to the connection of the Finnish and northwestern Russian population to the large and stable populations in Russia, while the Scandinavian population was likely isolated from potential immigration of new individuals from the east (Saarma et al. 2007). A recent study challenged the scenario of the Iberian peninsula as refugial area, as the genetic analyses of historical material of bears from Belgium and France indicate that this specific haplotype may be the origin of expansion of brown bears into southern Scandinavia (Ersmark et al. 2019).

The general conclusion is that the eastern and western genetic lineages of brown bears diverged about 0.85 million years ago and that bears re-colonised first southern Scandinavia from western Europe, followed by northern Scandinavia from eastern Europe. Here, both mtDNA-lineages possibly met about 5,000–9,000 years ago (Taberlet et al. 1995; Xenikoudakis et al. 2015), after the ice shield from the last glaciation had melted (Siivonen 1982). The eastern and western mtDNA-lineages are highly divergent, and a follow-up study further described the delination or contact zone in the middle of Sweden, where these two clades meet. The width of the contact zone was estimated to be ~130 kilometres. At the time of the study, only four individuals were identified that have crossed the contact zone from one lineage to the other (Taberlet et al. 1995). Overall, the mtDNA-haplotype diversity especially in southern Scandinavia was higher, as the genetic analysis of historical samples of brown bears archived at Swedish museums suggested (Xenikoudakis et al. 2015).

The current distribution of brown bears in Europe is shaped by centuries of severe persecution, bounty hunting, and rigorous extermination efforts (Zedrosser et al. 2011; Albrecht et al. 2017). Brown bears were also eradicated from most parts of northern Europe, and the once continuous population was split into the Scandinavian to the west and the Karelian in the east (Curry-Lindahl 1972; Swenson et al. 1995). It is assumed that the population in Scandinavia at its lowest point at the

end of the 19th century was not larger than about 100 individuals (Swenson et al. 1994). Due to the beginning of modern conservation-oriented thinking and management in the early 1970s, brown bear populations, along with other large carnivores, started to recover and to re-colonise their former distribution range in northern Europe (Chapron et al. 2014). However, despite regional comebacks, such as in northern Europe, brown bears and other large carnivores are still under substantial pressure and considered as endangered in Europe and other parts of the world (Dalerum et al. 2009; Ripple et al. 2014).

Assessing contemporary status by using nuclear DNA

Shortly after the first studies of mtDNA in brown bears and other wildlife had emerged, more genetic markers as well as new techniques were developed to enable the study of diversity via nuclear genetic variation. Such studies investigate historic as well as contemporary genetic patterns by using highly variable genetic markers, such as microsatellites or short-tandem-repeats (STRs). Microsatellites have been used since the 1990s, and their application intensified until recently (Paetkau/Strobeck 1994; Paetkau et al. 1995; Taberlet et al. 1997). With the development of next-generation sequencing and genomics, even more informative genetic marker systems were developed, such as single-nucleotide-polymorphisms (SNPs; Norman et al. 2013) or restriction site-associated DNA sequencing (RADseq; Andrews et al. 2016). All genetic marker systems have their advantages but also shortcomings. Mitochondrial DNA, inherited from the mother, can only enable insights into female-mediated genes and gene flow. In comparison, nuclear DNA is inherited from both parents and can be applied to the study of the more recent history as well as the current status of populations in relation to genetic variation, inbreeding, population substructure, interpopulation connectivity via gene flow and more, all of which are important for conservation and management of a species (Frankham 1995; 2005; Waples/Gaggiotti 2006; Allendorf et al. 2010). Norman et al. (2013) published a SNP-panel to study genetics and specifically the relatedness among individuals in Scandinavian brown bear. In contrast to the first nuclear genetic markers, the higher resolution of SNPs allows even more specific assessment of the genetic relationships among bears without prior biological information on their relatedness and family groups (Norman/Spong 2015).

In 2000, the first study on brown bears in Sweden using microsatellites was published (Waits et al. 2000). It was also the first comprehensive assessment of the brown bear's contemporary genetic variation and population structure using genetic methods in northern Europe. The results of that study showed that the genetic diversity of brown bears in Sweden was comparable to brown bear populations in North America. This was surprising, considering the drastic population decline and bottleneck Scandinavian brown bears had experienced due to the intensive hunt. The study also showed that the Swedish population appeared to be subdivided into four different subpopulations, of which the southernmost was geographically located below the previously described contact zone where the two distinct mtDNA-lineages meet (Taberlet et al. 1995). The same study was re-analysed with advanced Bayesian statistical methods a few years later, and the authors concluded that the Swedish population consisted not of four but rather of three subpopulations, with the individuals from the previously identified two northernmost subpopulation showing substantial geographical overlap, leading to the conclusion that these two subpopulations comprise of just one unit (Manel et al. 2004), shaped by isolation-by-distance (Schregel et al. 2018).

The reasons for the distinct genetic structure of brown bears in Scandinavia remained unclear until Xenikoudakis et al. (2015) published a study based on the genetic analysis of archived museum samples using historical bone, skin, and tooth samples. Their findings showed that the current genetic structure is the result of historical ecological processes. The authors reported that also the

historical Scandinavian population consisted of these three subpopulations and concluded that the current subdivision is not caused by anthropogenic fragmentation and a genetic bottleneck due to over-hunting. Based on the findings of different studies it is likely the combined effect of ecological processes such as e.g. the density of bears and level of relatedness among individuals in and between areas which can influence the dispersal and successful reproduction of bears outside their natal area. This has been indicated by results assessing kin-related structure (Støen et al. 2005; 2006; Frank et al. 2021) and gene flow among the areas in Sweden and Norway (Schregel et al. 2017; 2018). The current anthropogenic pressure, however, may sustain and manifest the current fragmentation further, as it has also been observed in other hunted wildlife species (Jerina/Adamic 2008; Krofel et al. 2012; Frank et al. 2021). Overall, these results warrant further studies into the history and biology of the Scandinavian brown bear population.

The disconnect of the Scandinavian and Karelian brown bear populations had strong effects on the genetics of both populations (Schregel et al. 2012; Kopatz et al. 2014; 2021). The genetic differences between these populations become obvious when bears from both populations are genotyped and compared with so-called Y-chromosomal markers (Bidon et al. 2014; Schregel et al. 2015; Hirata et al. 2017). Analogous to the mtDNA, the non-recombining fragment of the Y-chromosome enables the assessment of the paternal diversity and male lineages. This is of high interest, because such analyses can reveal dispersal patterns as males generally are the dispersing sex in brown bears, while females remain philopatric and tend to stay near their natal area (Støen et al. 2005; Zedrosser et al. 2007). Two recent studies analysed brown bears from the Scandinavian and the Karelian populations and documented strong genetic differentiation between these bear subpopulations as well as that the Y-haplotype diversity was distributed unevenly (Schregel et al. 2015; Kopatz et al. 2021). As reported by Schregel et al. (2015), Y-haplotype data of bears from Finland, northern Norway and northwestern Russia were high, with 32 haplotypes identified. In contrast, only four haplotypes could be found in the Scandinavian population in Sweden and in western and southern Norway. The haplotype distribution underlined the substantial subdivision of the bear populations in Scandinavia and Karelia (Schregel et al. 2012; 2017; Kopatz et al. 2014; 2021). Overall, these results suggested that the genetic recovery processes of these two populations have likely been very different (Kopatz et al. 2021). It is assumed that the Scandinavian bear population recovered to a large extent on its own, while in comparison the Karelian brown bear population in Finland and northern Norway experienced influx from the east, i.e. Russia (Tammeleht et al. 2010; Keis et al. 2013; Kopatz et al. 2014), which resulted in a population divided into two subpopulations, a northern and a southern one (Saarma/Kojola 2007; Tammeleht et al. 2010; Kopatz et al. 2014). The southern subpopulation showed a strong connection to bear populations in northwestern Russia, supporting the assumption of substantial migration and gene flow from Russia into Finland during the last decades (Keis et al. 2013; Kopatz et al. 2014). These high immigration rates, in contrast to the situation in Scandinavia, likely led also to the gradual mixing of these two subpopulations, so that more and more brown bears were showing the genetic signatures from both populations (Hagen et al. 2015; Kopatz et al. 2017).

In general, brown bear populations in Scandinavia and in Finland have recovered from population lows at the end of the 19th century (Chapron et al. 2014). Based on latest research, the population expansion front with bears from Scandinavia has entered Finland, i.e. bears from Scandinavia have dispersed into Finland (Kopatz et al. 2021). Also a few individuals from the Karelian population have been detected in Sweden, albeit considerably fewer, suggesting asymmetric migration (Fig. 2). This suggests that the Scandinavian bear population seems to have recovered earlier and therefore started expanding earlier compared to the Karelian population. These results highlight that conservation-oriented policies and wildlife management can lead to successful population recovery as well as the restoration of genetic connectivity between fragmented populations of brown bears (Kopatz et al. 2021).

Genetic information enabled a large body of scientific literature on the brown bears of northern Europe and has considerably increased the scientific understanding of population genetics as well as underscored the importance of genetics for conservation. Many of the studies presented would not have been possible without the strong collaborative spirit of national authorities and research groups. Especially Norway and Sweden have harmonised the monitoring and their methods and are now equipped with a unique common population monitoring system and database. The brown bear is one of the best-studied mammals in the world (Brooke et al. 2014), and the Scandinavian brown bear in particular has been of crucial importance in the development of the genetic monitoring of wildlife in general.

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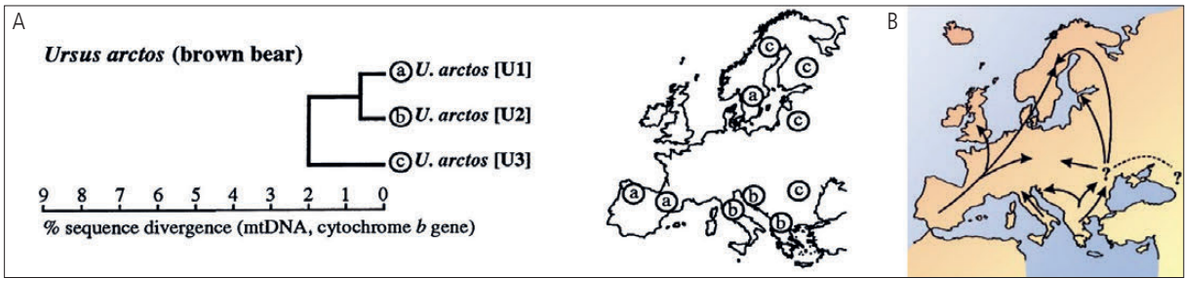


Fig. 1. a: Illustration of the phylogeography of the brown bear across Europe, based on the results by Taberlet/Bouvet 1994 (figure after Taberlet et al. 1998, fig. 2, copyright by Wiley); b: Brown bear postglacial colonisation routes with main refugial areas in Iberia, Italy, the Balkans and the Caucasus (figure after Hewitt 2000, fig. 2, copyright by Nature).

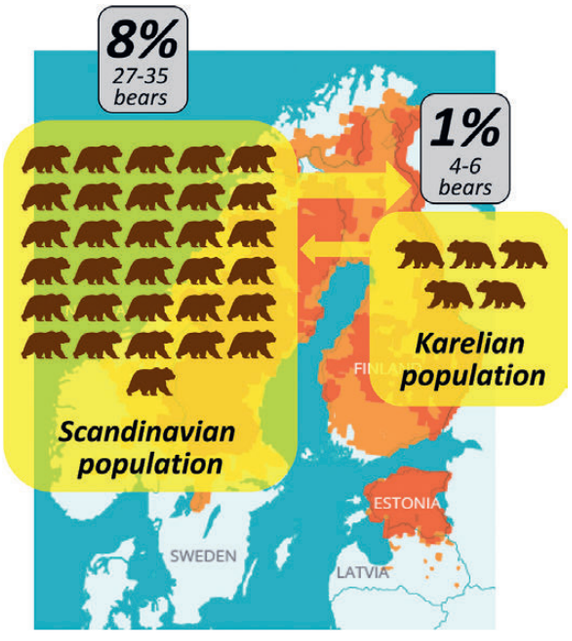


Fig. 2. Illustration of the asymmetric number of migrants per generation between the brown bear populations of Scandinavia (west) and Karelia (east), based on Kopatz *et al. 2021 (background map source: Horizon [modified], distribution data source: Large Carnivore Initiative for Europe, 2012–2016; bear icon by Freepik available on flaticon.com).*

Hibernation ecology of brown bears in Sweden

By Andrea Friebe, Jon E. Swenson and Andreas Zedrosser

Keywords: Scandinavia, brown bear, Ursus arctos, *den type, hibernation, physiology*

Abstract: Hibernation is an adaptive strategy to cope with unfavourable environmental conditions. Bears are the only large mammal that use this strategy during winter. They reduce their body temperature by several degrees and their metabolism by 20–50 % during hibernation. However, bears have an exceptional position among hibernators, because they are the only mammal with delayed implantation, gestation, parturition, and lactation during hibernation. Bears do not consume food but must rely on fat reserves during winter and give birth to one to three cubs during hibernation. In general, the length of hibernation is shorter at more southern latitudes and increases towards the north, and bears lose 20–45 % of their body weight during this time. Three types of winter dens are used by brown bears in Scandinavia: excavated anthill and soil dens (74 % of all dens), natural cavity dens (11 %), and open nest dens (15 %). Reproductive success in female brown bears is affected by the choice of den type, and females hibernating in better insulated dens have a higher probability of producing offspring. Brown bears prefer to den in forested areas that provide shelter from wind and cold temperatures, as well as at higher altitudes and areas with steeper slopes. Bears are especially sensitive to human disturbances during hibernation and prefer to den far from human infrastructure and settlements.

Introduction

Hibernation in mammals, i.e. the time period that an animal spends in a dormant or "sleeping" state, is an adaptive strategy to cope with unfavourable environmental conditions, such as winter (Nelson 1973; Nelson et al. 1973). It most commonly occurs in small mammals, such as ground squirrels, marmots, or bats, and can last from several days up to several months, depending on the species, ambient temperature, time of year, and an individual's body condition (Nelson 1973; Geiser 1998; Humphries et al. 2003). The physiology of a hibernating mammal in winter is profoundly different from its active state during the other times of the year. Hibernation is in generally characterised by physical inactivity, a reduction of physiological functions, low metabolic rate, and a reduction of the body temperature to as low as 0 °C (Barnes 1989; Geiser 2004; Friebe 2015).

Hibernating mammals do not necessarily remain torpid, i.e. inactive, throughout the entire hibernation season. Rather, hibernation usually is characterised by bouts of torpor that last several days or weeks, but are interrupted by periodic bouts with higher activity, i.e. short-term arousals. During those active bouts, the biochemical and physiological parameters return to an almost normal level, probably to recover from the physiological costs caused by metabolic depression (Prendergast et al. 2002; Humphries et al. 2003; Astaeva/Klichkhanov 2009). These time periods generally also

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 109–120 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134328

are used to consume food and water, as well as to urinate and defecate (Pinter 1984; Wang 1989; Pulawa/Florant 2000; Boyles et al. 2020).

Bears formerly were not considered "true hibernators", because their body temperature does not decrease as dramatically during winter as it does in other hibernating mammals, such as ground squirrels (*Sciuridae*) (Geiser 1998; Heldmaier 2011; Tøien et al. 2011). Also, hibernating bears can "wake up" very quickly from hibernation and even leave the den when disturbed, in comparison to small hibernating mammals, that need up to several days to wake up from deep hibernation. Based on advances in our understanding of physiology and biochemistry, hibernation is now more accurately defined as comprehensive metabolic suppression rather than only based on a decline in body temperature (Carey et al. 2003; Geiser 2004). Ursids reduce their metabolism by 20–50 % during winter, and therefore are considered as true hibernators (Heldmaier et al. 2004; Heldmaier 2011). However, bears have an exceptional position among hibernating mammals, because they are the only north-temperate species with delayed implantation, gestation, parturition, and lactation during hibernation (Ramsay/Dunbrack 1986; Spady et al. 2007; Robbins et al. 2012). The physiological and biochemical processes that regulate hibernation in bears are of great interest in human medicine and thus have become an emerging field in ecological biomimicry studies (e.g. Stenvinkel et al. 2012; Berg von Linde et al. 2015; Fröbert et al. 2020).

Hibernation ecology

Depending on the climatic zone and environmental conditions, brown bears (*Ursus arctos*) can spend more than half of their life in winter dens and may hibernate between five to seven months in a given year (Friebe et al. 2001; Manchi/Swenson 2005; Bojarska/Selva 2011). In general, the length of hibernation is shorter at more southern latitudes and increases towards the north. For example, some individual bears in southern European areas, such as Croatia or Spain, may not hibernate at all (Huber/Roth 1997; Nores et al. 2010), whereas all bears hibernate in northern Europe, for example in Sweden (Friebe et al. 2001; Manchi/Swenson 2005).

Brown bears do not consume food during hibernation and therefore must build up fat reserves for the long period of caloric deprivation during winter (Hellgren 1998; López-Alfaro et al. 2013). In late summer and autumn, bears enter a physiological state called hyperphagia, which is defined as period of highly increased caloric intake and highly increased search for food. Hyperphagia can result in a caloric intake up to 20,000 kcal/day (Nelson 1987), and brown bears may add up to 40 % of their body mass in fat before hibernation (Fig. 1; Nelson 1980; Nelson et al. 1983). Activity, heart rate and body temperature start to drop slowly several weeks before den entry, and bears usually enter the den upon arrival of the first snow and when ambient temperature reaches 0 °C (Evans et al. 2016). The first demographic group of bears to start hibernating is pregnant females, followed by females with older dependent offspring and subadult bears (Friebe et al. 2001; Manchi/Swenson 2005). The demographic group that starts hibernating latest and leaves the den earliest in the spring is adult males, followed by subadult individuals and females with older dependent offspring. Females that have given birth during hibernation are the demographic group that leave the den latest (Friebe et al. 2001; Manchi/Swenson 2005). For example, pregnant females start hibernating as early as late September in Sweden and leave their den with their young as late as early May the following spring (Friebe et al. 2001; Manchi/Swenson 2005).

Bears lose 20–45 % of their body weight while in the den during hibernation. However, the amount of weight loss during winter depends on several factors, such as the duration of denning, the bear's sex and age, and the reproductive status, whether a female is solitary, pregnant, or accompanied by cubs (Nelson et al. 1973; Kingsley et al. 1983; López-Alfaro et al. 2013).

In the hibernation state, a bear's oxygen demand is reduced to approximately 25–50 % of the active state, and the respiration rate is decreased to 1–2 times per minute (Hellgren 1998; Tøien et al. 2011). The low respiratory quotient of bears during hibernation indicates a pure fat combustion, i.e. they mainly use body fat for maintaining physiological functions, while conserving lean body mass like carbohydrates and proteins (Nelson et al. 1973; Nelson 1980; Boyer/Barnes 1999). Fat serves as an efficient caloric storage medium, as it features high energy density. To regain the stored energy, fat needs to be metabolised. Burning body fat produces water and carbon dioxide; the carbon dioxide is exhaled, and the water stays in the blood to keep the animal hydrated (Nelson et al. 1973). In contrast to all other hibernating mammals, bears do not urinate during hibernation. However, azotemia (increased blood levels of nitrogen that can induce kidney failure) does not develop in hibernating bears (Stenvinkel et al. 2012). Instead, the urea production is decreased, and any urea produced is recycled and resynthesised into skeletal muscles and other body proteins, to preserve lean body mass (Nelson 1989; Harlow et al. 2001; Stenvinkel et al. 2018).

Another measure to conserve energy and adapt to the reduced respiratory rate is decreased heart rate during hibernation. The bear's heart rate can be as low as 10 beats per minute (bpm) during hibernation, compared to the heart rate of approximately 50 bpm of sleeping bears in summer (Nelson et al. 2003; Folk et al. 2008; Laske et al. 2018). Simultaneously with the lowered heart and respiratory rate, the bear's body temperature drops, but only 2–6 °C below the summer core temperature of 37–38 °C. Bears maintain this body temperature by undergoing periodic muscular shivering (French 1986; Hissa et al. 1994; Tøien et al. 2011).

Thus, compared to other hibernators, the body temperature remains above the critical values for brain and muscle activity. Continuous electroencephalogram EEG recordings of American black bears (*Ursus americanus*) during the hibernation season revealed that they are predominantly asleep but are cycling between rapid-eye-movement and non-rapid-eye-movement sleep with very few phases of wakefulness (Folk et al. 2008; Rogers et al. 2020). Nevertheless, periodical short-term bouts of activity with frequent, small movements have been reported during hibernation (Friebe et al. 2013; 2014). The relatively high body temperature enables bears to wake up spontaneously from hibernation, and they are then capable of rapid responses with high mobility and endurance (Evans et al. 2012).

Although bears continue to produce some feces during hibernation, they do not defecate, which again is in contrast with all other hibernating mammals. Therefore, the feces accumulate in the intestine. The intestinal walls absorb water from the feces and, thus, a dry and hard fecal plug develops. Bears also groom during active hibernation periods, and some of these materials are swallowed during the self-grooming process, such as plant materials, hair, and skin. These indigestible materials pass through the digestive tract and become part of the fecal plug (Rogers 1981). Additionally, hair and claws from cubs can sometimes be found in fecal plugs, which indicates that female bears consume the body of cubs that died in the den (A. Friebe, personal observation). This fecal plug is the first scat produced after hibernation and is commonly found close to den sites (A. Friebe, personal observation).

Pregnancy and birth during hibernation

Brown bears in Scandinavia mate during spring and early summer, with the peak of the mating season around the 1st of June (Steyaert et al. 2012). Brown bears exhibit delayed implantation, i.e. the embryo (blastocyst) does not implant immediately, but is maintained free-floating in the uterus in a state of suspended dormancy for four to five months until implantation occurs in November/December, after the onset of hibernation (Spady et al. 2007; Friebe et al. 2014).

For successful implantation and reproduction, females require a minimum amount of body mass and fat (~19 %) prior to hibernation. This determines whether the implantation of blastocysts happens or not (Elowe/Dodge 1989; Atkinson/Ramsay 1995; López-Alfaro et al. 2013). Gestation in bears lasts approximately 56 days (Friebe et al. 2013). This short period limits the energetic costs of reproduction by truncating embryonic development, which in turn reduces the size of offspring and thus the initial costs of lactation. Brown bears commonly give birth to one to three cubs, which are born in the den in January/February (Zedrosser et al. 2011; Friebe et al. 2014). Bear cubs are naked at birth and weigh about 300–500 g (Robbins et al. 2012). The milk of bears is very rich in protein and fat (Derocher et al. 1993; McDonald/Fuller 2005; López-Alfaro et al. 2013), and brown bear cubs in Sweden weigh approximately 5 kg when leaving the den for the first time in late April to early May (A. Friebe, personal observation).

Den types

Dens are an essential part of brown bear ecology and reproduction, because pregnant females give birth to cubs while hibernating in their dens during winter. Brown bears normally hibernate alone in their dens, except for females that give birth or that are still accompanied by older dependent offspring. In general, most brown bears hibernate in a new den every winter and there is little or no reuse of the same den over successive years (Ciarniello et al. 2005; Elfström/Swenson 2009).

The main functions of a den are reduction of energy loss during winter, as well as protection against disturbance from conspecifics or other species, including humans (Petram et al. 2004; Sahlén et al. 2011; Shiratsuru et al. 2020). The construction of the winter den seems to be an innate behaviour. Cubs of the year that had lost their mother and thus never had the possibility to learn how to construct a den, have built dens and successfully hibernated there on their own (Swenson et al. 1998). However, bears certainly gain experience in building dens and the construction improves over the years (Petram et al. 2004; González-Bernardo et al. 2020). Several studies have shown that den construction and the habitat where a den is located affect individual fitness. The insulation properties of snow contribute to constant temperature and additionally decrease energy costs for the bear (Nelson et al. 1983; Servheen/Klaver 1983; Elfström et al. 2008).

Bear dens are normally small in relation to the size of the bear. They often have an inner radius less than 1 m and a small entrance (A. Friebe, unpublished data), which can be completely covered with snow during winter. The snow seals the inner part of the den effectively from the weather conditions on the outside, contributing to increased thermal insulation (Craighead/Craighead 1972). To improve insulation properties, bears normally gather vegetation as insulating bedding materials, which helps to minimise energy loss (Reynolds et al. 1976; Tietje/Ruff 1980).

Generally, three types of dens are used by brown bears in Scandinavia: excavated anthill and soil dens (comprising 74 % of all dens; A. Friebe, unpublished data), natural cavity dens (11 %), and open nest dens (15 %; see Fig. 2). Excavated dens are preferred in many landscapes, including Scandinavia (Linnell et al. 2000). The space around an animal's body is kept tight to increase energy efficiency in excavated dens, which likely decreases the energetic costs of hibernation (Tietje/Ruff 1980; Shiratsuru et al. 2020). In comparison, natural cavity dens cannot be adjusted, and a suitable cavity may be difficult to find. In Scandinavia, the excavated anthill den is the most widely used den type, followed by dens dug in soil (Manchi/Swenson 2005). An anthill den is excavated in an abandoned ant mound that is overgrown with vegetation. The main difference between an anthill den and the other den types is the composition of the walls. The walls of anthill dens are composed by loose organic material interspersed with roots that provide stability and create an additional air layer for insulation. In comparison, soil dens usually miss this insulating air layer and may also contain more

moisture (Schoen et al. 1987). Anthill dens are significantly more often used by females than by males, likely due to the higher degree of insulation compared to other den types, which is especially important for pregnant females (Elfström/Swenson 2009). Reproductive success in female brown bears is affected by the choice of den type, and female brown bears hibernating in better insulated dens have a higher probability of producing offspring (Klenzendorf et al. 2002). Nowack (2015) observed in Sweden that females hibernating and giving birth in anthill dens on average produced larger litters and had more male offspring, compared to females that hibernated and gave birth in other den types.

Hibernation in natural cavity dens is comparatively rare in Scandinavia, but more common in southern European populations, such as in Slovenia and Croatia (Huber/Roth 1997; Petram et al. 2004). Natural cavities are less insulated than excavated dens, however, they do not require as much energetic investment prior to use.

The least insulated den type is open dens, often also referred to as nest dens or basket dens. These dens usually contain only a thick layer of bedding material and are commonly placed close to the base of a tree or rocks. The construction lacks walls or a roof, and the only insulation is provided by the bedding material and the snow that covers the hibernating bear during winter (Martorello/Pelton 2003; Seryodkin et al. 2003; Elfström et al. 2008). These types of dens primarily are used by large adult males in Scandinavia, which also makes them more vulnerable to disturbance during hibernation (Elfström/Swenson 2009; Sahlén et al. 2015). Males have a larger body and more fat reserves than females and smaller bears and are therefore probably better suited to bear the energetic costs of a den without protective walls or roof. However, bears using open dens hibernate for a shorter period compared to bears using other den types, which indicates that the open structure probably is less efficient when it comes to thermal insulation and energy loss, especially in periods where there is little or no snow (Elfström/Swenson 2009). In southern European countries with less severe winters, also female bears use open dens more frequently (González-Bernardo et al. 2020).

Denning habitat

Numerous studies have described the denning habitats of brown bears worldwide (e.g. Linnell et al. 2000; Ciarniello et al. 2005; Elfström/Swenson 2009; Sahlén et al. 2011; Smereka et al. 2017; Mangipane et al. 2018; González-Bernardo et al. 2020). In general, the habitat surrounding a den site is highly variable and its selection depends on the available habitat types within a bear's home range. The specific ecological factors affecting a bear's den site selection are local climatic and habitat characteristics, as well as ground cover and terrain characteristics. Bears seem to select denning locations carefully in good time before actual hibernation. For example, female bears in Sweden visit the area where they finally build their dens more than once a month during the active season, probably because a suitable and safe den site is important for the survival of the cubs (Friebe et al. 2001; Sahlén et al. 2011). A study of denning behaviour in Sweden has shown that bears that had not visited their denning area prior to hibernation were more likely to abandon their den due to disturbances (Sahlén et al. 2015).

Brown bears generally prefer to den in forested areas that provide shelter from wind and cold temperatures, as well as at higher altitudes and in areas with steeper slopes (Ciarniello et al. 2005; Elfström et al. 2008; Libal et al. 2011). Dens are better insulated at higher altitudes due to higher snow cover, which has a positive impact on the energetic efficiency during hibernation (Libal et al. 2011). Den construction also seems to be easier on a slope compared to flat ground, and the den is likely better protected from flooding due to rain or melting snow. Additionally, a den on a steep slope probably provides better protection against disturbance, as it is more difficult to access (Haroldson et al. 2002).

Brown bears are sensitive to disturbances in the denning area and during hibernation, especially to human activities during the time of the initiation of hibernation. This is likely also an important reason why bears in general choose den sites far from infrastructure and human settlements (Swenson et al. 1997; Sahlen et al. 2015). In addition, a thick vegetation cover that favours the concealment of the den entrance seems to be an important factor to avoid human-caused disturbance (Elfström et al. 2008; Ordiz et al. 2012; Eriksen et al. 2018). Bears may abandon their winter dens if disturbed. Den abandonment rates are high in Sweden, on average 22 % of dens are abandoned on an annual basis, and most abandonments occur during the start of hibernation (Sahlen et al. 2015). Approaching dens on foot has been documented to cause den abandonment (Goodrich/Berger 1994; Linnell et al. 2000; Evans et al. 2012); other causes seem especially related to forestry activities carried out with heavy harvester vehicles during winter or proximity to roads that are cleared from snow on a regular basis (Elfström et al. 2008; Elfström/Swenson 2009). Den abandonment carries a high metabolic cost. Body temperature and heart rate increase when bears are forced to change their den sites, and they require about two to three weeks to return to the physiological hibernation level after disturbance (Evans et al. 2016). A study on American black bears (*U. americanus*) showed that bears that changed dens during winter had a greater weight loss than undisturbed bears (Tietje/Ruff 1980). In addition, several studies have demonstrated that disturbance of pregnant female brown bears during winter can lower their reproductive success, especially if disturbance occurs during the middle or end of the hibernations season (Smith 1986; Elowe/Dodge 1989; Goodrich/Berger 1994; Swenson et al. 1997). Mid-winter or late winter den abandonments probably cause an increased energy cost, as the bear is deeper in hibernation and the snow cover makes locating new suitable dens difficult (Evans et al. 2012).

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Fig. 1. Researchers measure the body fat composition of a sedated five-year-old male brown bear after hibernation. Bioelectrical Impedance Analysis is used, i.e. a very weak electric current measures the body fat content of an individual (photo A. Friebe).


A


B



Fig. 2. Den types used by brown bears in Scandinavia. a: Excavated ant hill den; b: Entrance to a natural rock cavity den; c: Open nest den (photos A. Friebe).

The social system of a "nonsocial" species, the brown bear

By Andreas Zedrosser, Shane C. Frank, Jennifer E. Hansen, Sam M. J. G. Steyaert and J. E. Swenson

Keywords: Scandinavia, brown bear, Ursus arctos, *dispersal, hunting, mating system, social system*

Abstract: Brown bears are a nonterritorial and solitary species, i.e. they do not defend an exclusive territory against conspecifics. Instead, they live in overlapping home ranges – areas that are not defended and in which animals live for the majority of their lives. The brown bear has a polygamous mating system, i.e. both sexes mate with several partners. The mating season is in spring and early summer, and both sexes roam over large areas to find reproductive partners. Males commonly compete for access to females, and fights can inflict severe injuries or cause death. Male competition for reproductive success can result in sexually selected infanticide (SSI), a reproductive strategy in which males kill dependent conspecific offspring for obtaining mating opportunities. Young bears disperse at one and a half to two years of age. Males typically disperse very long distances, up to several hundred kilometres. In contrast, female dispersal distances are short, on average 10–25 km. Female brown bears commonly form matrilineal assemblages (i.e. spatial clusters of related females), with home range overlap correlated with relatedness. Hunting greatly affects the social system of brown bears in Scandinavia. The removal of conspecifics through hunting creates vacancies on the landscape, and surviving bears shift their home ranges toward these vacancies, which increases the probability of SSI and negatively affects population growth rate.

Introduction

The social system of a species describes the pattern of relationships between and among individuals and social groups and how these individuals and social groups are distributed across the landscape. Brown bears (*Ursus arctos*) are considered a nonterritorial and solitary species, i.e. they do not defend an exclusive territory against intrusion from other conspecifics, as wolverines (*Gulo gulo*) or Canada lynx (*Lynx canadensis*) do (Schwartz et al. 2003). Instead, brown bears live in overlapping home ranges – areas in which animals live and move for the majority of their lives (Fig. 1). A home range is not defended, like a territory, but it commonly overlaps with home ranges of other conspecifics of the same and opposite sex. In addition, brown bears are not group-living, such as grey wolves (*Canis lupus*), but live solitarily throughout the year, with the exception of mothers accompanied by dependent offspring (Steyaert et al. 2020). Congregations of bears at abundant food sources, such as spawning salmon (*Oncorhynchus* spp.) or garbage dumps can occur (Craighead et al. 1995; Ben-David et al. 2004), but are usually only temporary aggregations of individuals as long as the food resource lasts.

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Mating system

A species' mating system is an integral part of its social system, and refers to the behavioural strategies used to obtain reproductive partners and ensure reproductive success (Emlen/Oring 1977). The main factors used to describe a mating system are the strategies used to find and secure mates, how many mates an individual mates with, and the parental care, or the absence thereof, provided to the offspring (Emlen/Oring 1977). From an evolutionary and behavioural point of view, males and females typically invest differently in mating, reproduction, and parental care (Trivers 1972; Andersson 1994). Male mammals generally produce a large amount of small sperm cells and try to mate with as many partners as possible, whereas females generally produce fewer, but larger, egg cells and invest more time and energy into the parental care of the offspring. In general, mate selection is thus a much more important decision for females than for the rather indiscriminate males (Trivers 1972).

These differences in male and female reproductive biology and behaviour result in sexual selection, in which members of one sex choose mates of the other sex to mate with (intersexual selection), and compete with members of the same sex for access to members of the opposite sex (intrasexual selection) (Andersson 1994). These two forms of selection combined result in some individuals having greater reproductive success than others in a population, because they are, for example, more attractive or physically larger and stronger in direct competition for mates. Because receptive females generally are the limiting resource in reproduction, males face more intensive intrasexual competition for mates (Trivers 1972). In most mammalian species, including bears, this has resulted in pronounced sexual dimorphism (differences in appearance) and polygamous mating systems (Andersson 1994; Steyaert et al. 2020). Examples for sexual dimorphism are the antlers of male deer species, e.g. red deer (*Cervus elaphus*), or the very colourful plumage of some males in bird species, such as the peacock (*Pavo cristatus*). Brown bears exhibit sexual body size dimorphism, and males can be up to twice as large as females, which points towards an intense male-male competition for access to receptive females (Andersson 1994).

The brown bear has a polygamous mating system, i.e. both sexes can associate and mate with several partners during the mating season (Steyaert et al. 2012). This season is in spring and early summer and peaks in Scandinavia around the first week of June (Steyaert 2012). During this time period, especially males, but also females, roam over large areas to find reproductive partners for mating (Dahle/Swenson 2003b). Associations between the reproductive partners can last for just a few hours up to several weeks. Single males sometimes try to monopolise individual females by isolating them from other bears at remote sites (e.g. mountain ridges) and over prolonged periods of time (Hamer/Herrero 1990; Edwards/Derocher 2015). Males also fiercely compete for access to females, and fights can inflict severe injuries or cause death (McLellan 1994; Craighead et al. 1995). Body size and condition, age, and aggression typically determine the dominance status and reproductive success of males, and larger and older males produce more offspring (Zedrosser et al. 2007a).

Inter- and intrasexual competition for reproductive success can even extend to after birth of the offspring, in the form of sexually selected infanticide (SSI; Hrdy 1979), also in bears (Swenson et al. 1997; Bellemain et al. 2006a). SSI is a reproductive strategy in which males kill dependent conspecific offspring for obtaining mating opportunities (Hrdy 1979; Steyaert et al. 2020; see also Zedrosser et al. on sexually selected infanticide, this volume).

Dispersal and spatial organisation of bears

Female Scandinavian brown bears give birth for the first time on average at the age of five years, and males reach sexual maturity around the age of five to six years, but occasionally reproduce at

a younger age (Zedrosser et al. 2007a; 2009; Fig. 2). Following successful mating in spring, the implantation of the fertilised egg is delayed until November/December, and parturition occurs after six to eight weeks of active gestation, around January/February (Spady et al. 2007; Friebe et al. 2014). The mean litter size of Scandinavian brown bears is 2.3 cubs/litter, and litter size ranges from one to four cubs (Zedrosser et al. 2009). Multiple paternity, i.e. offspring from different fathers in the same litter, is common in bears (Bellemain et al. 2006b).

Young bears remain with their mother for either one and a half to two and a half years, after which they separate from their mother during the mating season (Dahle/Swenson 2003a). Shortly after separation, they disperse (Van de Walle et al. 2018). Natal dispersal, i.e. the process from leaving the maternal home range where an individual is born until it settles into a home range on its own, is a gradual process that may occur over several years in bears (McLellan/Hoovey 2001). Male bears typically disperse over very long distances (Dahle et al. 2006; Krofel et al. 2010) and may spend some years moving around before they settle into a home range.

Almost all male bears disperse from their maternal home range, with a mean dispersal distance in Scandinavia of about 100 km (Støen et al. 2006a; Frank et al. 2020). The underlying reason for male dispersal is likely to avoid inbreeding with related female bears (Zedrosser et al. 2007b). In contrast, female dispersal is not as likely and distances are shorter; only 30–45 % of the females disperse, moving 10–25 km on average (Støen et al. 2006a; Frank et al. 2020). Females that were born by younger mothers with small body sizes are more likely to disperse (Zedrosser et al. 2007b). Our research showed that dispersal was more likely to occur at lower population densities, suggesting that high density formed a social constraint that hindered dispersal (Swenson et al. 1998; Støen et al. 2006a). Also, young females seemed to compete for the possibility to stay within their mothers' home ranges, because smaller female siblings stayed farther from their mothers and dispersed more often than larger female siblings (Zedrosser et al. 2007b). Given that females tend to be philopatric (settling in or overlapping their maternal range), they are more likely to be in social contact with nearby bears over the course of their lifespan compared to dispersing and wide-ranging males. In Scandinavia, female bears appear to use the "social landscape" to help make dispersal decisions, and they prefer to settle where they overlap the home ranges of female bears with whom they have likely had previous contact and of their mother (Hansen et al. 2021). However, they also settle a home range with greater overlap of their maternal home range if their mother is deceased, which is usually due to hunting mortality in Scandinavia.

Although brown bears are not territorial, they do not seem to be as solitary as we once thought. Females, for example, form matrilineal assemblages (spatial clusters of related females), with home range overlap correlated with relatedness, likely based on kin recognition (Støen et al. 2005; Fig. 3). Related females living in matrilineal assemblages have a very high overlap of their home range with neighbouring related females, compared to very little overlap of home ranges with neighbouring but unrelated females. Competition among females for reproduction also occurs, as the probability of a female brown bear having cubs in a given year varies in relation with distance to the closest neighbouring female and whether or not the latter has cubs (Støen et al. 2006b; Ordiz et al. 2008).

Human effects on the social system of bears

Hunting and harvesting of mammals, including large carnivores, can affect their social structure and population growth rate (Rutledge et al. 2010; Gosselin et al. 2015; Frank et al. 2017). For bears, the removal of conspecifics through hunting creates vacancies on the landscape and induces surviving animals to shift their home ranges toward these vacancies (Frank et al. 2017; Leclerc et al. 2017).

Although little is known about how this spatial reorganisation affects individual fitness, links have been made between hunting, male home-range shifts, male mating success, sexually selected infanticide, and variation in population growth (Gosselin et al. 2015; 2016; Leclerc et al. 2017; Frank et al. 2020). SSI is a male reproductive strategy, whereby males gain mating opportunities by killing dependent young (Hrdy 1979), and males should only kill offspring that they have not fathered. Swenson et al. (1997) have shown that hunting large adult males disrupts the male social organisation in an area, and 1.5 years after a large adult male was killed by hunters, SSI increases because a new male takes over the deceased male's home range (Leclerc et al. 2017) and kills the deceased males' cubs in the area to improve its own chances of reproductive success (Swenson et al. 1997; Steyaert 2012). Hunting of adult males can therefore indirectly contribute to negative population growth through increased juvenile mortality (Gosselin et al. 2015; 2016; Frank et al. 2017). Gosselin et al. (2015) found that cub survival was lowest under high hunting pressure in the Scandinavian bear population and estimated that it could explain approximately 14 % of the variation in the population growth rate. However, the effect of hunting of males on population dynamics in brown bears is a contested topic among bear biologists and managers, and effects of hunting seem to differ among populations (McLellan 2015; Steyaert et al. 2020).

Hunting may also indirectly affect reproduction and reproductive success of female bears in Scandinavia (Frank et al. 2017; 2020). Reproduction of young females remaining in their mother's home range is suppressed, likely due to the presence of the mother. In comparison, young females dispersing out of the maternal home range start reproduction earlier (Støen et al. 2006b; Ordiz et al. 2008). Competition among females for reproduction also occurs after primiparity; the probability of a female brown bear having cubs in a given year is affected by whether or not neighbouring females have cubs in the same year. Thus, dominant pregnant adult female brown bears appear to inhibit reproduction in their female neighbours, which introduces reproductive asynchrony to the population, with neighbouring females having cubs in alternating years (Ordiz et al. 2008; Frank et al. 2017).

Dispersal in large carnivores has been shown to change as a result of harvest (e.g. Cooley et al. 2009), which could affect the distribution of females across the landscape (e.g. Robinson et al. 2008); there is some evidence of this in brown bears near the Swedish-Norwegian border (Bischof et al. 2012). Hunting may also affect dispersal in Scandinavian brown bears. The hunting pressure on bears has increased in Sweden since about 2010, which has resulted in a decrease of the population, a result desired by Swedish wildlife managers (Swenson et al. 2017). The population size of brown bears in neighbouring Norway is heavily dependent upon dispersing individuals from Sweden, which has resulted in fewer bears detected in Norway in recent years due to the increased hunting quotas in Sweden (Aarnes et al. 2014; Frank et al. 2017).

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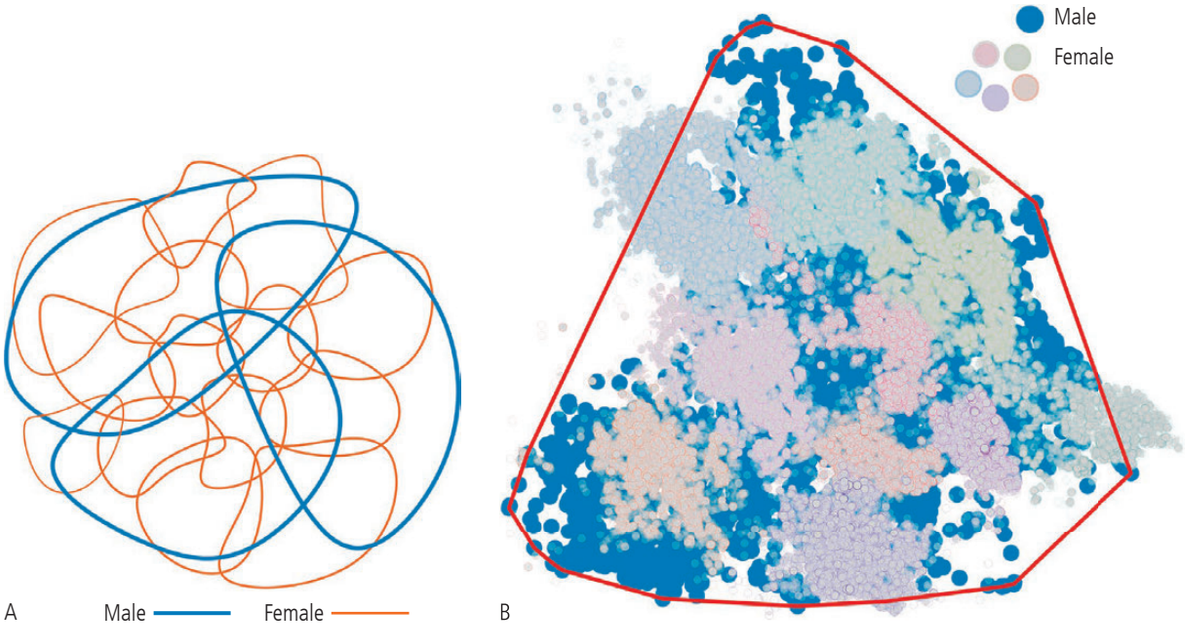


Fig. 1. The spatial distribution of GPS-collared brown bears illustrating the strong inter- and intra-sexual overlap of home ranges in Sweden. a: Home range size (based on the minimum convex polygon method) of adult male (blue) and adult female (orange) brown bears; b: Home range overlap of an adult male bear (red line depicts the outline of the home range based on the multiple convex polygon method; blue dots depict GPS radiolocations) with the home ranges of different adult female bears (dots in different colours depict GPS relocations of several females) (graphics J. E. Hansen).



Fig. 2. A female brown bear accompanied by her offspring, likely a one-year-old, in Finland (photo I. Kojola).

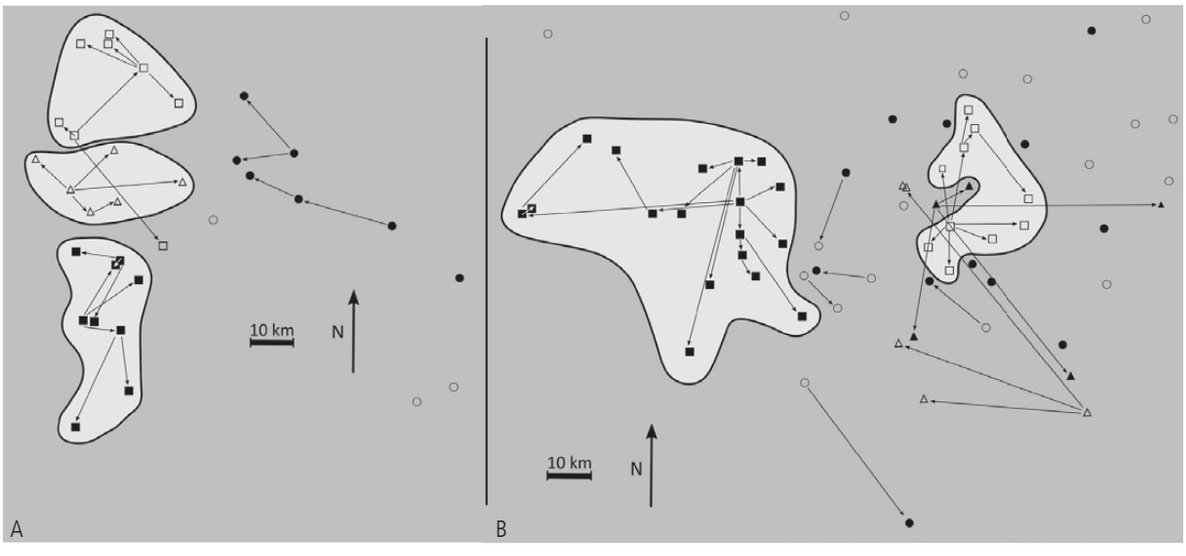


Fig. 3. Centers of home ranges and shot locations of adult female brown bears (five years and older), illustrating spatial structure of female matrilines in northern (a) and southern (b) Sweden. Home-range centers were calculated by 95 % adaptive kernel for females with >30 radiolocations and as arithmetic mean for females with <30 radiolocations. Matrilines consisting of more than three generations, or five individuals of radio-marked females are shown with open squares, closed squares, open triangles, and closed triangles. Radio-marked females belonging to other matrilines are shown with closed circles. Arrows show mother-daughter dyads, with the arrow pointing to the daughter. Matrilinear assemblages are shown by shaded areas (after Støen et al. 2005).

Sexually selected infanticide as a mating strategy in brown bears

By Andreas Zedrosser, Sam M. J. G. Steyaert and Jon E. Swenson

Keywords: Scandinavia, brown bear, Ursus arctos, *mating strategy, reproductive success, sexually selected infanticide*

Abstract: According to the theory of sexual selection, members of one sex compete for the access to the other. The sexual selection hypothesis for infanticide proposes that a male taking over a new group of unrelated females will kill the infants. By doing so, the invader removes a competitor's offspring while speeding up the opportunity to mate with the victimised mother. However, several requirements must be met in order to categorise infanticide as sexually selected (SSI): 1) a male should not kill his own offspring; 2) killing of infants must shorten the time period to a female's next estrus and shorten the interbirth interval; and 3) the male should sire the mother's next offspring. SSI benefits the fitness of the male, but is very costly to the fitness of the mother, and thus female counterstrategies have evolved. SSI has been studied in the Scandinavian brown bear, in which it can induce up to 30 % cub loss per year. Evidence for all three requirements of the SSI hypothesis has been documented in Scandinavian brown bears, and females show evidence of behavioural counterstrategies to SSI. Hunting of especially male bears seems to increase the probability of SSI and can limit population growth, because bear cub mortality increased significantly six months and especially one and a half years after an adult male bear was killed in an area. However, this mechanism is controversial and cannot be generalised among bear species and populations.

Sexually selected infanticide as a male reproductive strategy

Reproduction and reproductive strategies are at the very core of sexual selection, and ultimately evolution (Stearns 1992). Charles Darwin was the first to formulate the idea of the male infanticide model for reproduction (Darwin 1871). According to the theory of sexual selection, members of one sex compete for the access to the other. Over time, the winners produce more offspring than do others. The sexual selection hypothesis for infanticide proposes that, in certain species, a male invading a new group of unrelated females will routinely kill the infants of other males. By doing so, the invader removes a competitor's offspring from the population while speeding up the opportunity to mate with the victimised mother, who stops nursing and soon again is willing to mate with the perpetrator. Together, these actions promote the invader's gene pool at the expense of his peers (Brown 1996).

Hrdy (1979) was the first to document this behaviour in Bengal Hanuman langurs (*Semnopithecus entellus*): After the usually hostile replacement of a dominant male by an invading new male, the offspring of the replaced male disappeared, and the mothers in the harem came into estrus again within a short time period and mated with the new dominant male. Based on these observations, Hrdy (1979) formulated the hypothesis of sexually selected infanticide (SSI), by which males kill unrelated

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offspring in order to be able to mate with the mother. She listed five possible reasons for infanticide: 1) social pathology (caused by a "deranged" individual); 2) use of resources (cannibalism); 3) competition for resources (e.g. food, habitat); 4) manipulation by the parents (e.g. to reduce the litter size); and 5) sexually selected infanticide (competition for reproductive partners as the limiting resource).

However, several requirements must be met in order to categorise infanticide as sexually selected: 1) the probability of a male killing his own offspring should be very low; 2) because females caring for dependent offspring enter lactational anestrous in many mammals, i.e. they do not mate, killing the dependent offspring must shorten the time period to a female's next estrus and shorten the interbirth interval; and 3) the male, or his close relative, such as when related males share a harem, should have a high probability of fathering the mother's next offspring. SSI benefits the fitness of the male, but is very costly to the fitness of the mother, and thus female counterstrategies have evolved (Ebensperger 1998). These counterstrategies primarily include: 1) female aggression and coalitions to defend offspring; 2) mothers avoiding males that are too large to repel; 3) promiscuity to confuse paternity so males tolerate young that may not be theirs; and 4) assistance in defending the territory of a female family group (Ebensperger 1998; Steyaert et al. 2020).

SSI is common in many taxa and has been documented in nearly 100 species, such as rodents, predators, and particularly primates. Van Schaik (2000) collected all known direct observations of infanticide in primates and analysed them in relation to the hypotheses proposed by Hrdy (1979). Based on a total of 54 observations, infanticide occurred in 85 % of all cases after a new male had taken over a group of female primates. A total of 98 % of the dependent offspring were not killed by their father, and 67–100 % of the offspring, depending on the primate species, were killed at an age that would theoretically shorten the time until the mother's next ovulation. And in 78 % of all cases, the "murderer" mated with the mother of the killed offspring (Van Schaik 2000). This meta-analysis suggests that especially the infanticide hypotheses relating to social pathology and resource competition receive very little support, whereas almost all cases were in accordance with the SSI hypothesis (Van Schaik 2000).

Lions (*Panthera leo*) provide another well-known example of infanticide. Long-term observations in the Serengeti have shown very low cub mortality due to infanticide as long as an established group of males, usually brothers, was in control of a pride of female lions. However, if the brothers in power were replaced by another group of males, all cubs under nine months of age were killed by the new males. This represents a reproductive advantage for the new group of males, because it reduced the time until the females come to heat again from about 20 to about five months (Pusey/Packer 1994).

SSI has mainly been documented in socially living mammals, however, the brown bear (*Ursus arctos*) is a solitary living species. Depending on the population, females become sexually mature between four to eight years (Zedrosser et al. 2009) and give birth to usually one to four cubs in the winter den in January (Zedrosser et al. 2011). The cubs stay with the mother for at least one year, whereby a female does not come into heat when accompanied by young. After the mother has separated from her young, she comes back into estrus, mates again, and gives birth to a new litter in the next year (Steyaert et al. 2012; 2020). The minimum time interval between two litters is therefore at least two years for brown bears in Europe; however, in Sweden also a three-year interlitter interval is becoming increasingly common (Van de Walle et al. 2018). In North America and Asia, females usually keep their cubs for at least three years, and intervals between two litters of four or five years have been documented (McLellan 1994; Nawaz et al. 2008; Zedrosser et al. 2011).

Among bears, SSI has mostly been studied in the Scandinavian brown bear, in which it can induce up to 30 % cub loss per year (Fig. 1; cf. Gosselin et al. 2016). Brown bears generally meet the first requirement for SSI, as they have extended interbirth intervals, during which mothers do not enter estrus (lactational anestrus) or mate. Killing cubs would thus return the mother to a breeding condi-

tion earlier. In Scandinavian brown bears, for example, females typically enter estrus just a few days after losing an entire litter during the mating season (Steyaert et al. 2014).

The second and third SSI requirements are more difficult to document; however, there is genetic evidence that both requirements exist in brown bears (Bellemain et al. 2006a; Davoli et al. 2018; Steyaert et al. 2020). The second requirement, i.e. the mechanism that prevents males from killing their own offspring, remains somewhat unclear in bears. Unless a male immigrates into an area and mates with females he has never met before or can recognise the females he mated with the previous year, there remains the probability that an infanticidal male could kill his own offspring (Steyaert et al. 2020). However, it is very likely that males recognise females, as individual recognition is widespread in a great variety of animals (Tibbets/Dale 2007). In addition, the female counterstrategy of paternity confusion (see more below) by mating with several males during the mating season only works if females are promiscuous and males can recognise individual females they have mated with (Bellemain et al. 2006b; Steyaert et al. 2020).

The third SSI requirement, i.e. the infanticidal male has a high probability of fathering the victimised mother's next offspring, is least clear (Steyaert et al. 2020). Brown bears live in forested areas, have home ranges of several hundred to a thousand square kilometres and a relatively low population density. Thus, it is very difficult to carry out behavioural research in the species based on direct visual observations. Instead, more indirect methods are used, such as by collecting data from bears outfitted with collars equipped with sensors recording and sending the approximate geographic location of a bear, i.e. radio telemetry and GPS telemetry, as well as data based on the collection of genetic samples from hair or feces. Despite these difficult conditions, Bellemain et al. (2006a) were able to document that, in eight cases of infanticide of brown bears in Sweden, the evidence obtained via radio telemetry tracks on the ground and genetic analyses showed that the infanticidal male never was the father of the cubs he killed (Table 1).

Female counterstrategies to sexually selected infanticide

For a female of any species, it is of course no advantage if her offspring are killed by a male. Accordingly, females have via the evolutionary processes of sexual and natural selection developed strategies to avoid infanticide by males (Pusey/Packer 1994; Van Schaik/Janson 2000). However, unlike group-living animals, such as many primates or lions, the solitary living bears do not form coalitions or groups of females that cooperate to defend their offspring against aggressive males. Also, bears do not defend fixed territories to keep conspecifics at a distance (Bellemain et al. 2006b; Steyaert et al. 2012).

Female brown bears have developed several counterstrategies to defend their offspring against infanticidal males. Female bears are notorious for the aggressiveness with which they defend their cubs, and it even happens that a mother bear is seriously injured and even killed in fights with adult males (McLellan 1994). Of course, it is not in a male's interest to kill the female with whom he actually wants to mate, but in the heat of the moment such a "moment of rage" can happen, albeit rarely.

An important maternal strategy is to avoid adult males spatially and temporally during the mating season, because of the possibility of sexually selected infanticide (Ben-David et al. 2004; Steyaert et al. 2013; 2016). Radio-telemetry studies have shown that female bears with cubs use very small home ranges during the mating season and are particularly active at times of the day when adult males are least active (Fig. 2; cf. Steyaert et al. 2013). In addition, female bears accompanied by dependent offspring avoid areas frequented by adult males during the mating season, which is when male bears attempt SSI (Swenson et al. 1997; 2001). Steyaert et al. (2016) assessed the relationship between offspring survival and habitat selection in Scandinavian brown bears and found that mothers of young

of the year that remained relatively closer to human settlements during the mating season lost fewer offspring to infanticidal males compared to mothers that avoided humans and human habitation. Adult males generally avoid humans and human activity on the landscape level (Nellemann et al. 2007; Steyaert et al. 2016), which suggests that some female brown bears may use the proximity to humans as a "human shield" to reduce sexual conflict with males and to avoid SSI (Steyaert et al. 2016).

An additional counterstrategy that female bears may apply against sexually selected infanticide is paternity "confusion" (Bellemain et al. 2006b). During the mating season, male and female bears roam over very large areas in search of mating partners (Dahle/Swenson 2003). According to the sexual selection theory and to maximise the potential number of offspring fathered, males should try to mate with as many females as possible during the mating season (Andersson 1994). Male bears may try to use sexually selected infanticide as mating strategy to increase the number of females willing to mate. However, for this reproductive strategy to work, a male must not kill its own young (Hrdy 1979). Female bears take advantage of this fact and, for their part, mate with as many males as possible in their environment, with the result that 28 % of the litters with three cubs have young with different fathers (Bellemain et al. 2006b). A male bear seems to be able to remember which females he mated with during the last mating season, and thus will not attack this particular female's cubs. If as many males as possible around the mother believe that they are the father of the cubs, this female bear may be able to avoid sexually selected infanticide (Bellemain et al. 2006b).

Anthropogenic effects on sexually selected infanticide

Trophy-hunting of adult male bears can cause rapid male turnover and home range rearrangement, which may artificially increase SSI and can limit population growth (Swenson et al. 1997; Gosselin et al. 2015). Swenson et al. (1997; 2001) found that bear cub mortality increased significantly six months and especially one and a half years after a large dominant male bear had been killed in an area. Furthermore, 85 % of the cub losses occurred during the mating season, and 80 % of the females who lost their cubs gave birth to young again the following year (Swenson et al. 1997). Both the food conditions and human disturbance in years with high cub loss had little influence on this cub mortality (Swenson et al. 2001). This suggests that the death of a dominant adult male disrupted the male social structure for about one and a half years, because another male took over the home range of the deceased male and killed cubs of resident females in order to achieve reproductive success more quickly. This mechanism is controversial, as it cannot be generalised among bear species and populations (Steyaert et al. 2020). For example, strong evidence for this mechanism exists in a population in south-central Sweden (Swenson et al. 1997; 2001; Gosselin et al. 2016; Leclerc et al. 2017). Studies in North America, however, have found that removing adult males had little effect on the survival of cubs of mothers that lived within the dead males' home range (McLellan 2005; Schwartz et al. 2006; McLellan 2015). Undoubtedly, demographic population parameters (e.g. population density, sex ratio) as well as the ecological context (e.g. availability and clustering of food resources) likely affect the prevalence of SSI in bear species and populations (Steyaert et al. 2020).

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Fig. 1. Remains of a brown bear cub killed and partially consumed by an adult male brown bear during the mating season (photo S. M. J. G. Steyaert).

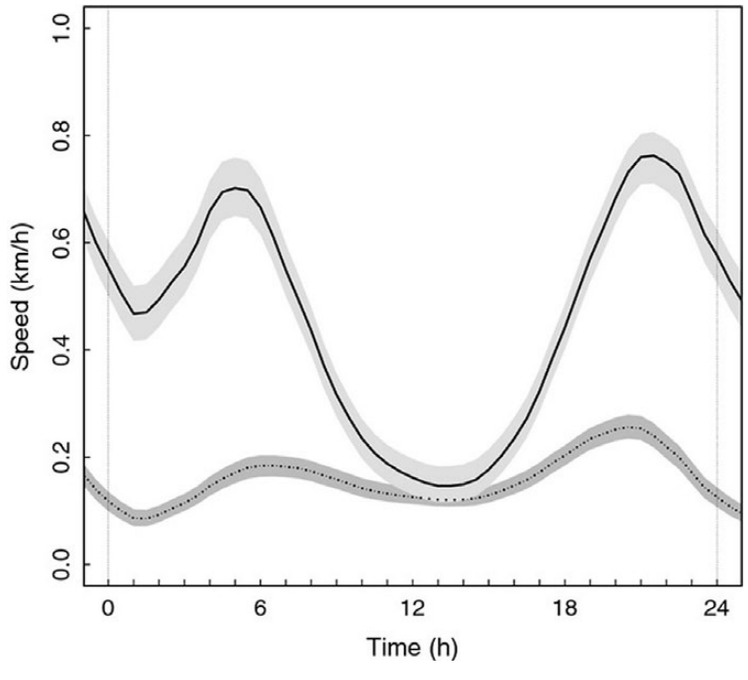


Fig. 2. Mean diurnal movement rates (km/h) fitted with a moving average spline of lone female brown bears (–) and females with cubs-of-the-year (····) during the mating season in central Sweden in the years 2006–2011. The shaded areas represent the 95 %-confidence intervals. Vertical grey lines delineate one day, from midnight to midnight. Females with cubs-of-the-year moved significantly less and more evenly distributed throughout the course of 24 hours compared to lone adult females participating in the mating season (after Steyaert *et al. 2014).*

Table 1. Genetic paternity analysis of Scandinavian brown bear cubs-of-the-year killed or probably killed by male bears (table adjusted and reproduced after Bellemain *et al. 2006a).*
a = no cub sample available for genetic analysis; b = mother was killed during the infanticidal attack; c = identified from DNA in hair (age unknown); d = no paternity identified among sample males; e = identified via DNA extracted from the fecal sample of an adult male bear that contained cubs' remains found in an area where almost 100 % of the adult males were radio-marked. "Unmarked" refers to a non-radio-collared male bear.

		Infanticidal male	Father of the killed litter		Father of the next year's litter	
Case	**Mother**	**ID (age)**	**ID (age)**	**Paternal probability**	**ID**	**Paternal probability**
1	W9308	W8807 (12)	a		W8807	>0.98
2	W9404	W9311 (6)	a		W9311	>0.95
3	W8905	W8607 (27)	a		W8607	>0.99
4	W9307	W9301 (9)	a		W9301	<0.99
5	W8905	W9807 (11)	W8607 (28)	<0.99	b	
6	W9307	Unmarked[c]	W930 (10)	<0.99	a	
7	W9615	W9921 (9)	Unmarked[d]	<0.99	a	
8	BD007	Unmarked[e]	BD088 (8)	<0.99	b	

Bears – fact and fiction about bear hunting and intelligence

By Oliver Grimm, Andreas Zedrosser and Jon E. Swenson

Keywords: Brown bear, attack, fight, intelligence, demotion in fables and fairy tales

Abstract: Within the framework of the present book, especially two questions emerged about the bear and its natural behaviour in the wild: Do bears attack while standing upright, and are they really as slow and dumb as often described in fables and fairy tales? Bears stand upright for a variety of reasons, often simply to obtain a better overview, but never to charge at an opponent. When bears are truly aggressive and intend to attack a prey or opponent, they attack very fast by charging in great leaps and bounds on all four legs, but never on their hind legs. Upon making contact, bears then commonly rear on their hind legs and fight by biting as well as by swatting with their powerful front arms and claws at their opponent or prey. The myth of the slow and dumb bear may be rooted in their sometimes slow and seemingly clumsy gait and movements, and the fact that other animals, such as foxes or ravens, may follow a bear's trail in order to to use it as a food indicator. However, scientists working on animal intelligence as well as researchers working with bears agree that bears should be considered a highly intelligent species with an incredible adaptability and ingenuity especially when it comes to gaining access to food.

Introduction

Bears were both respected and feared in historic times. People sometimes feared that the bear would overhear when his real name was used in conversation and that this would bring about an unwanted and dangerous encounter with the animal itself. Instead, people commonly used so-called taboo names, such as "the brown one" in Germanic, "honey eater" in Slavic, and other such denotations in the Baltic languages, whereas in Finnish and Sami there were real words for the bear but also many circumscriptions (Pentikäinen 2007, 97, for Finland; cf. Nedoma, Piludu, Sommerseth, and Udolph, this volume). In turn, this suggests that people had an enourmous respect for the bear, which is also very evident in some of the honorary titles given to the animal such as the "(golden) king of the forest" in the Finnish-Karelian sphere (cf. Piludu, this volume). This respect, the bears' human-like abilities to walk upright (i.e. bipedally on its hind legs) and the danger bears presented in direct and confrontational encounters have made the bear one of the most prominent wildlife species in European history and folklore. Within the framework of the present book, especially two questions emerged about the bear and its natural behaviour in the wild:

1. When and why do bears stand upright, and are historic depictions of bears standing upright while hunted biologically correct? In premodern times, the hunting and killing of bears was considered to be a heroic deed and bears were commonly killed by hunters using a spear with a "stopper" (Fig. 1; Oehrl 2013; see Almond, this volume). In imagery, bears that are attacked by hunters are

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 137–145 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134331

often depicted as standing fully upright. This contradicts with observations by researchers and description by hunters that bears attack swiftly by running on all four legs. In the general public, it is commonly assumed that a bear standing upright is aggressive.

2. How intelligent are bears? Their seeming ability to understand human communication and overhear the unwanted use of their name, as well as their similarity with humans (same stature and silhouette, walking on soles, being able to stand upright and walk bipedally, etc.) may have contributed to ideas of the bear's intelligence in prehistoric and historic times. For example, hunters have claimed that bears backtrack in their own footprints to throw off pursuers or that old bears back into their dens with their rearend first, thereby leaving footprints that seem to lead out of the den (Bieder 2005, 24). In contrast, bears are commonly described as being rather dumb and outwitted by foxes in fairy tales and fables (cf. Böldl, Hirsch, and Veselova, this volume). So, how intelligent are bears? Below we attempt to answer these questions from a biological perspective.

Do bears attack standing upright and are historical images of bear hunts biologically correct?

Many mammals can stand upright. For example Alpine marmots (*Marmota marmota*), meerkats (*Surikata surikatta*), and the European ground squirrel (*Spermophilus citellus*) stand upright to look for potential dangers. Eurasian red squirrels (*Sciurus vulgaris*) and many other rodents sit on their hind legs and manipulate food with their front feet. Kangaroos propel themselves forward with their hind legs. However, besides the great apes and humans, only very few mammals share the unique ability of *Ursids* to stand and walk bipedally. Bears are plantigrade, i.e. they walk on the whole sole of their foot, similar to humans. All bear species have the ability to stand upright, and even walk bipedally for short distances (Fig. 2). This adds to their mystique, because bears can readily transform from a four-legged to a bipedal creature (Garshelis 2009, 497). "This appears to have given rise to Nepali and Tibetan legends of the Yeti: in these cultures, beings are not necessarily static, so a bear walking on four legs is a bear, but after switching to two legs becomes a Yeti. The fact that a bear's hind foot prints, which look very human-like, often cover its front tracks, strenghened the belief that this creature commonly walked bipedally for long distances (and thus might really be an ape, leaving tracks in the snow – hence the 'abominable snowman')" (ibid., 480). Standing enables bears to sniff the air or listen to sounds from a higher vantage point (ibid.). Bears can stand upright to observe, feed, reach for food or an object, to scent mark, or to fight, and they may rise up to reach or grab their prey or an opponent (Brown 2009; Garshelis 2009). However, bears do not attack, i.e. charge at an opponent, from an upright position (Brown 2009). Hererro (1985, 23) describes the behaviour of a bear when encountered by humans the following way: "A grizzly bear (i.e. a local name for the brown bear in inland North America) rearing onto its hind legs, a common stance, is trying to sense what is happening. Normally this is not an aggressive posture. On its hind legs the bear sniffs, listens and looks, trying to discover what kind of animal stands before it. Standing on its four legs a grizzly may show agitation by swaying its head from side to side, making huffing noises, or by opening and closing its mouth and making clicking noises with its teeth. Running and circling, usually to get downwind, may follow to get into a better position to sense (especially smell) the strange object. If the bear feels threatened, fleeing or charge may follow."

When bears are truly aggressive and intend to attack a prey or opponent, they attack very fast by charging in great leaps and bounds on all fours, but never on their hind legs (Brown 2009). Bear hunters in Sweden describe that bears "come in low and fast" if they truly mean to attack (Boström/Lännbjer 2010). However, this attack or charging behaviour must be differentiated from the actual

Ursid fighting behaviour (Figs. 3–6). In a fight, bears use their powerful teeth to bite and kill, usually in the face and neck area of the prey or opponent. In addition, they use their extremely muscular forearms to swipe and swat at the opponent or prey, inflicting severe wounds with their long claws and the sheer force of their blows (Brown 2009). Bears will sometimes fight in a standing position (Garshelis 2009), i.e. to be able to fight with their forelegs, bears commonly rise to their hind legs during the fight to bite and swat at the opponents face, neck and shoulder area. This is also how bears fight with each other; they stand on their hind legs and try to bite and trash the conspecific opponent's face and shoulder area (Brown 2009). A typical injury in prey animals killed by a brown bear is a broken spine or other broken bones (Skåtan/Lorentzen 2011).

When pursued by hunters and with dogs, bears will almost always try to run and avoid the confrontation. However, once cornered or understanding that it can not escape its pursuers, a bear may turn around to fight. Bears are notorious for their ferocity and sheer strength in fights. A bear may sometimes slightly rise to its hind legs to have its fore legs availabe for fighting off attacking dogs. Hunters have used these moments to try to spear a bear that is busy fighting off a pack of aggressive and attacking dogs. Wild boars (*Sus scrofa*) have been and still are hunted in similar ways, for example in France and Australia. The hunter with a knife (pig sticker) or spear (*Saufeder*) kills a pig that is trying to fight off dogs or that may even be immobilised by several dogs that have grabbed it and pinned it to the ground. Such hunting situations are highly dramatic and heroic, and are thefore a common theme in hunting lore and art.

In summary, the secret in fully understanding when and why bears stand upright likly can be found in the distinction between a bears' observation behaviour, attacking or charging a prey or opponent, and the actual fighting behaviour with prey, conspecifics, or other species (including historic hunters with spears and accompanied by dogs). The lesson for a person going for a walk in an area with bears is to not be afraid when a bear suddenly rises to an upright position at a distance. The bear is usually trying to understand the situation and obtain a better overview. One should try to make noises that identify oneself as a human and not run away, but retreat slowly. Usually a bear will simply move away from the perceived danger.

How intelligent are bears?

Brown bears have been commonly portrayed in the historic western literature as slow, both mentally and physically (Bieder 2005, 23–24). For example, they are commonly outwitted by the smart and quick red fox (*Vulpes vulpes*) in the fables of the Greek storyteller Aesop and in fairy tales (cf. Böldl, Hirsch, and Veselova, this volume). However, in early times, bears were said to be wiser than man, because man does not know how to live all winter without eating anything (Hallowell 1926), and in the folklore of both Sweden (Tollin 2007, 256) and Norway (Schandy/Hermansen 2019, 93) a bear was said to possess the strength of twelve men and the sense of ten men.

It is exceedingly difficult to measure the intelligence of mammals other than humans, and even more so if we try to measure intelligence in human terms. No interspecific test systems are in place that enable us to directly compare the intelligence of bears and other mammals. Monkeys and apes are considered the smartest among mammals next to humans (e.g. Dicke/Roth 2016). We also consider gray wolves (*Canis lupus*) and their domestic counterpart, the dog, as very intelligent. In general, humans consider socially-living carnivores as smart, as evidenced by our close relationship with dogs and their use for a plethora of tasks in cooperation with humans. Bears have a large brain size relative to their body size, compared to other carnivores. However, they have been neglected in studies of cognition in comparison to other carnivores, such as the often socially-living canids (Vonk et al. 2012). In an experiment, American black bears (*U. americanus*) were presented with a series of

natural concept discrimination tasks that varied in degree of abstraction on touchscreen computers. At least one bear performed at above-chance levels with transfer to novel images at each level of abstraction (Vonk et al. 2012). Even tool use has been reported in wild brown bears (Deecke 2012). Whereas the use of tools is comparatively common among primates and has also been documented in several species of birds, fishes, and invertebrates, tool-using behaviours have so far been observed in only four species of nonprimate mammals. Deecke (2012) describes the observation of a subadult brown bear in southeastern Alaska that repeatedly picked up rocks in shallow water, manipulated and reoriented them in its forepaws, and then used them to rub its neck and muzzle. The behaviour probably served to relieve irritated skin or to remove food remains from the fur. Bears habitually rub against stationary objects and overturned rocks and boulders during foraging, and such rubbing behaviour could have been transferred to a freely movable object to classify as tool use (Deecke 2012).

Researchers and bear biologists commonly consider bears as highly intelligent, although these opinions are more often based on anecdotal observations and personal experiences rather than hard data (Brown 2009). For example, a bear biologist reports that he has observed on one occasion that an American black bear backtracked in his own footprints for about 50 meters and then jumped off the main trail, walking away in a different direction, likely to conceal its tracks (Brown 2009; cf. Hererro 1985). It remains unknown how common this behaviour is, however, similar observations have been reported by hunters and in hunting folklore (Bieder 2005, 24). Bears are definitely highly trainable, as witnessed by bears in circuses that have been trained to ride bicycles, play instruments, or carry out other taks in order to entertain the audience (Brown 2009). Although ethically questionable, this shows the ability of bears to learn and process information. Wild-living and food-conditioned bears are able to break into and raid cabins for food, as well as open garbage containters with sophisticated locking mechanisms meant to keep bears away from garbage. New "bear-proof" models of garbage containers are developed and tested with animals living in captivity almost on an annual basis, because wild bears keep figuring out how to open the lastest and newest bear-proof containers. Bears also have outstanding spatio-temporal awareness and memory and remember the exact location and temporal availability of food sources for many years (e.g. Noyce/Garshelis 2011). For example, a radio-collared adult male bear in Sweden has been observed to carry out a two-week migration every year at almost exactly the same time to the same location about 150 km south of his usual home range. This bear likely fed on a resouce there, such as garbage or bait, and then returned to his usual home range (J. E. Swensson/A. Zedrosser, unpublished data). DeCasien et al. (2017) suggested that species with a generalised or omnivorous diet, i.e. of both animal and plant origin, have larger brains and may be more intelligent than, for example, herbivores that feed just on plants. Bears have an omnivorous diet, which, together with their outstanding spatio-temporal awareness and memory, suggests that a generalised diet may be more critical than group living regarding the evolution of complex cognition in carnivores (Vonk et al. 2012; DeCasien et al. 2017). Bears are certainly able to recognise each other individually, as evident by their spatial dominance hierarchies (Støen et al. 2005) and mating strategies (Bellemain et al. 2006; Steyart et al. 2012). Mothers also spend up to three years with their young, and during this time the cubs learn the skills necessary for survival.

We speculate that part of the explanations for the myth of the slow bear may be their sometimes slow and seemingly clumsy gait and movements, but also that other animals, such as foxes, ravens (*Corvus corax*) and magpies (*Pica pica*), may follow on the trails of bears to benefit from the bears' ability to find and dig out or make accessible in other ways, food resources, such as ungulate carcasses. However, one should not be fooled by the slow gait and the sometimes clumsy or playful behaviour of bears, or their depiction of being slow and dumb by Aesop and in fairy tales: Bears are most definitly highly intelligent animals with an incredible adaptability and ingenuity especially when it comes to gaining access to food.

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Fig. 1. Hunting spear used for brown bears and wild boars. 44 cm long; Germany/ Austria, 15th century (© Metropolitan Museum, Gift of William H. Riggs, 1913. Public Domain).



Fig. 2. A family group of brown bears raised on their hind legs to observe a situation in the distance. This posture is commonly used by bears to obtain a better overview, to reach for food, or manipulate a food item or object. A bear standing on its hind legs is usually not a sign of aggression. Picture taken at a bait site for photography in Finland (photo S. Klaus).



Fig. 3. Brown bears in a playful fight in Katami National Park, Alaska, USA. Both bears are on their hind legs and engage in harmless play. The same posture is commonly also taken during serious and harmful encounters with intra- or interspecific opponents or prey. However, a bear would not charge or run towards an opponent on its hind legs, but on all fours, and raise to its hind legs at the very last moment to have its front arms ready for fighting (photo Th. Sbampato).



Fig. 4. Illustration of a bear hunt in medieval times. From a biological perspective this picture is difficult to interpret other that it depicts the actual moment of killing of a bear with a bear spear. No dogs or other hunters are visible. "Herr Hawart" in the Codex Manesse, a Liederhandschrift *(manuscript with songs), furnished with numerous illustrations. Made in Zurich, Switzerland,* c. *1300 (© Universität Heidelberg, Cod.Pal. Germ. 848, f. 313r. Public Domain Mark 1.0).*



Fig. 5. Historic print depicting a medieval bear hunt. From a biological point of view, this depiction appears highly dramatised and with an unrealistic but "heroic" touch. Brown bears are solitary living and do not occur in groups or packs. Also knights in heavy full-body armour were likley too slow to approach a bear on foot and stab it with a dagger unless the bear was cornered by dogs. Made by the Flemish artist Johannes Stradanus (1523–1605), active in Florence, with prints by the name of "Venationes Ferarum" (© Metropolitan Museum, The Elisha Whittelsey Collection, The Elisha Whittelsey Fund, 1949. Public Domain).



Fig. 6. Historic engraving depicting a bear hunt with dogs and hunters armed with bear spears. Despite a certain element of dramatisation, this picture likely reflects a realistic bear hunt. A single bear is occupied by trying to fight off a pack of dogs while a hunter approaches with a spear to stab the bear. Wild boar were and still are hunted in a similar manner. These types of hunts commonly resulted also in the injury or death of many of the dogs. Made by the German artist Virgil Solis (1514–1562) (© Metropolitan Museum, The Elisha Whittelsey Collection, The Elisha Whittelsey Fund, 1957. Public Domain).

Bear hunting (Europe)



Head of a hunting spear with stoppers. Used in the bear or boar hunt. Germany/Austria, 15th century. 44 cm long (see Almond*, this volume; photo Metropolitan Museum, 14.25.321, Gift of William H. Riggs, 1913. Public Domain. CO 1.0 Universal [CC0 1.0]).*



The bear hunt. The hunter sneaks up behind the bear and shoots it in the back while it is eating autumn berries (see Grimm*, Summary, this volume; image after Olaus Magnus'* Historia de gentibus septentrionalibus *1555, XVIII,25).*

Bear hunting in the later Middle Ages and early modern period, viewed from the perspective of art history and contemporary textual sources

By Richard Almond

Keywords: Bear hunting, images, courtly, aristocratic, par force de chiens*, anthropomorphism, bear-baiting*

Abstract: The aim of this chapter is to select, examine, describe and interpret images of bear hunting from the later Middle Ages and early modern period,[1] supported by reference to contemporary textual sources, in order to understand Man's interaction and relationship with Ursus arctos *during the title period. Basically, this involves clarifying and assessing the consistency and validity of the evidence of three aspects of bear hunting: who did it, what practices and weapons were used, and why bear hunting was regarded as special within the aristocratic hunting culture of the time frame. Images can be misleading, as in the case of didactic hunting illustrations in the so-called "hunting books" of the period which represent the idealised or "perfect" scenario of events and practices. Hunting has always been and remains an unpredictable activity, subject to many variable elements which are partly or even largely out of the direct control of the venator. In the field, the hunter often must make ad hoc-plans to adapt to reality. Instructional texts and accompanying images sought to redress these disadvantages as far as possible by educating the learner and courtly audience in the correct behaviour, language and procedures. Of course, these didactic sources were socially biased, written or compiled by royal or aristocratic authors, and their utilisation applied specifically to the social elites who were literate and had access to such sources, as well as the wealth and leisure to indulge themselves in such activities. However, it is also clear from some sources that bears were hunted in different ways by common hunters and others who had valid reasons other than sport to kill them.*

Bears have been hunted and killed for sport and raw materials, as well as for security and protection reasons, from time immemorial. The Greeks and Romans enjoyed bear hunting. A 4th-century Roman mosaic (Fig. 1) in the Museo della Civilita Romana, Rome, Italy, features two methods of classical bear hunting: On the right a hunter on foot directs large mastiffs to drive a bear into a long net fixed to trees; on the left a hunter waits to drop the door of a box-like trap with a ramp after a bear has entered, no doubt attracted by bait. In his didactic poem on "The Chase", *Cynegetica*, compiled in the early 3rd century AD, Oppian (the so-called Pseudo-Oppian) describes the bear hunt: "For

1 For the purposes of this essay, the date which divides the later medieval period/later Middle Ages from the early modern period is 1485, the beginning of the English Tudor monarchy; this period in turn closing in 1714, the end of the Stuart dynasty.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 149–170 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134332

bears an exceeding glorious hunt is made by those who dwell on the Tigris and in Armenia famous for archery. A great crowd go to the shady depths of the thickets [to hunt them]". He includes the ancient practice of using a *lymerer* or scenting hound, to trace a bear to a thicket (dense cover), setting nets around it, then driving the bear into the nets (Oppian, 189–193). This enduring technique is repeated in the late 14th century by Gaston Fébus in Chapter 52 of his iconic book, *Livre de chasse* (Paris MS Fr 616 Ch. 52, fol. 93).

The bear as sporting quarry occupied a particular niche in the minds of royal and aristocratic medieval and early modern period hunters. As the largest predator in Europe, enormously strong with immense endurance, fast and extremely dangerous (Cummins 1988, 122; Oehrl 2013, 304), the bear was classified in the contemporary European instructional texts as one of the high-status beasts of the chase and was included as "noble" quarry, thus suitable for hunting by aristocratic hunters. However, the overriding reason for its "special" position in the array of noble quarry is the apparent similarity of the bear to Man in a number of its habits. These range from an upright gait and fighting stance, as shown in some contemporary illustrations (see Grimm et al. on Bear – fact or fiction, this volume) to its human-like copulating position, as has been wrongly assumed by Gaston Fébus, author of a famous hunting book (see below). These apparently anthropomorphic aspects will emerge clearly from the visual and literary sources considered in this chapter. A 13th-century Greek School miniature entitled "Game – The Animals you can Hunt" from the didactic *De Venatione* by Oppian (Fig. 2), now in the Biblioteca Nazionale Marciana, Venice, Italy, makes the point of suitability and choice to the novice hunter. An experienced Master (right) lectures the young Apprentice (left) on what is correct game: wolf, bear, boar, deer (Fig. 2: top), lion, elephant, rhinoceros, leopard (Fig. 2: bottom).

The bear does not feature in the English medieval hunting books such as *The Art of Venerie,* the *Boke of Huntyng, The Tretyse off Huntyng* or *The Master of Game*, the logical reason being its complete extinction in England centuries earlier (Rackham 1993, 33–34). It appears that the bear had lapsed from the memory of English hunters and only remained as an icon in the Church, in heraldry, and as a fearsome, later loveable, beast in legends and children's stories. However, in his Foreword to *The Master of Game* (1904, and repeated in the 1909 edition), the President of the USA, Theodore Roosevelt, an acknowledged historian and sportsman, mentions the bear's importance on the continent: "The kings and nobles, and the freemen generally, of the regions which now make up France and Germany, followed not only wolf, boar and stag […] but [also] the bear" (Baillie-Grohman/ Baillie-Grohman 1904; 1909, xxi).

An exception to the general silence on bear hunting in the English manuals is the two chapters in Turbervile's *Booke of Hunting* from 1576. These are entitled "Of the Hunting of the Beare, and first of hir nature and properties Chap. 77" and "The manner of hunting the Beare Chap. 78" (Turbervile 1908, 216–220). Turbervile's book of 1575, *The Noble Art of Venerie,* printed together with Turbervile's *The Book of Falconry or Hawking,* is a translation by George Gascoigne (1525–1577), English poet and soldier, of the French manual *La Venerie* (1561) by Jacques du Fouilloux. This unrevised plagiarising of a continental manual explains the inclusion of the chapters on bear hunting, relevant to French and continental *veneurs* but not English hunters in the late 16th century. The author (whoever it is) writes that he has included the wolf, the bear and the reindeer as: "I have not thought good to leave out, although they be not in use here with us in England: since they seeme by the description, to be noble chases, and much esteemed in other countreys" (Turbervile 1908, 220). The descriptions of bears and the bear hunt are detailed and are clearly derived from earlier continental works, particularly *Livre de chasse.* In this paper, we will not refer to this manual again but will keep to the information provided by the older treatises.

A rare comment on the bear in later English history is found in *The Description of England: the Classic Contemporary Account of Tudor Social Life* by William Harrison, discussing King Canute's

(spurious) *Forest Charter* of 1019: "The beasts of the chase were commonly the buck, the roe, the fox and the [pine] marten. But those of venery in the old time were the [p. 260] hart, the hare, the boar and the wolf; but as this held not in the time of Canute [as given by the Elizabethan barrister, gamekeeper of Waltham Forest and Justice of the New Forest Eyre, John Manwood (d. 1610), in his writings on Forest Law; bears do not appear among the beasts given in cl. 23, 24 and 27] so instead of the wolf the bear is now crept in, which is a beast commonly hunted in the East [Baltic] countries and fed upon as excellent venison, although with us I know not any that feed thereon or care for it at all" (Edelen 1968, 258, 260).

Gaston III, compte de Foix, called Fébus (1331–1391), wrote probably the most informative and technically useful text on medieval hunting, *Livre de chasse* (Almond 2003, 9). This canonical treatise is a personal and original work, with the exception of the chapters on dismembering deer and wild boar plagiarised from an earlier hunting book by Henri de Ferrières, *Le Livre du roy Modus et de la royne Ratio*, written between 1354 and 1376/77, and a long poem by Gace de la Buigne, a chaplain/courtier and hunting author. It was begun on 1st May, 1387 and completed in 1389 (Gaston Phébus, 5, 14; Almond 2003, 13). 44 copies of *Livre de chasse* are known to exist, the majority from the 15th century, a few from the early 16th century (Gaston Phébus, 5–6). Many of them are illuminated or illustrated, some unfinished; MS Fr 616 (dated 1405–1410, now in the Bibliothèque nationale, Paris) being the most beautifully illustrated and complete. *Livre de chasse* was widely known and regarded and as such had a profound influence on courtly hunting practices in Europe. Fébus devotes several chapters to the nature and hunting of the bear, a familiar quarry to him living on his vast estates in the Pyrenees of southern Europe. These are entitled: Chapter 8, "Of the bear and its nature" (Fig. 3), Chapter 52, "How to hunt and slay bears", and Chapter 62, "How to slay bears and other beasts with spring traps" (Paris MS Fr 616: Ch. 8, fol. 27v; Ch. 52, fol. 93; Ch. 62, 106v). An illuminated miniature in a copy of *Livre de chasse* at the Bibliothèque Mazarine, Paris, France, shows the kind of rough mountainous terrain where bears could be found (Fig. 4). Fébus respected the bear for its great strength but considered its head vulnerable to a sharp blow which would stun or even kill it. He goes into interesting detail of the bear's life cycle. The pregnant she-bear "holes up" in December after mating until she gives birth in March. Fébus says that the cubs, two at most, lie as if dead for one day while their mother warms them with her hot breath and literally "licks them into life" (Gaston Phébus, 25–26). According to the medieval bestiaries, bear cubs were born in the lair as formless lumps of fat and the "licking into shape" symbolises Christianity converting the heathen (Clark 1984, 42; cf. also Van Os, this volume). This action can be seen in the *bas de page* illustration of folio 318v, MS Egerton 1146, British Library. Fébus continues that the she-bear nurses them for a month then feeds them pre-masticated food. Intriguingly, Fébus believed that bears mated on top of each other like humans, *aguise dôme et de femme* (Gaston Phébus, 25–26), another example of the anthropomorphism applied to bears by medieval hunting authors. Ironically, Fébus died in 1391, aged 60, whilst washing his hands before the hunt supper prepared in the hall of the hospice at his castle at Orthez, after returning from a bear hunt in the forest of Sauveterre, near Pamplona. Falling backwards, he cried "Je suis mort!" before expiring (Cummins 1988, 128–129, taken from Gunnar Tilander's edition of *Livre de chasse* [Tilander 1971]).

In Iberia the bear had high quarry status, both Alfonso XI of Castile (r. 1312–1350) and John I of Portugal (r. 1385–1433) regarding it as royal game. Bears were protected throughout Portugal for hunting by the king; killing one resulting in an enormous fine (Cummins 1988, 121). The Holy Roman Emperor Maximilian I (Roman-German King from 1486; Holy Roman Emperor r. 1508–1519) was also an ardent bear hunter; in his book *Thuerdank* there are three sections on bear hunting, and in his *Hunting Notebook* Maximilian advises "You must go hunting with a spear, and always have one – go after him with the spear […]" (Neiderwolfsgruber 1992, 35–36). His favourite method was to tackle the beast in its lair, on foot and single-handed, armed only with a short hunting spear

or hunting sword (Baillie-Grohman 1904, 158). This almost suicidally brave technique reflects Maximilian's high regard for the fighting qualities and courage of the bear, making it a worthy foe to take on face-to-face. The bear is thus seen as a personal challenge to the dedicated hunter rather than as a quarry simply providing a prolonged and exciting chase like the hart or buck. However, in spite of dedicated enthusiasts like Fébus, Alfonso XI and Maximilian, opinions on the bear varied, and *The Lexicon of the Mediaeval German Hunt* says of the bear: "Amongst other heavy game […] even the brown bear is of little importance" (Dalby 1965, xvii). German sources do include the bear, but its value as a quarry species is generally regarded as being considerably inferior to that of the stag, boar and hare. However, images of bears do feature in some German manuscripts. MS Egerton 1146, a Germanic Book of Hours in the collection of the British Library dating from 1475–1485, is a beautiful manuscript containing hundreds of life-study images of animals, birds and fish. It has three illuminated miniatures of bears and bear hunting. In the *bas de page* of fol. 11v, "October" in the Calendar, a mounted hunter thrusts a cross-hilted spear into a huge blackish-furred bear which is being harried by hounds (Fig. 5); in a marginal illustration of fol. 20r the garlanded blond-haired hunter is on foot, gleefully using a long spear to dispatch the beast (Fig. 6; cf. Almond 2003, 69–70).

Illustrations in the hunting manuals and treatises, frescoes, tapestries, paintings, carvings and other art media associated with socially elite spaces provide plentiful details of how bears were hunted by royal and aristocratic hunters. This activity was a highly organised and strictly managed team event, designed for guaranteeing maximum excitement and effectiveness. Many European sources show that the bear was hunted on horseback and on foot, usually assisted by large hounds including running-hounds, alaunts and mastiffs, collectively known as *Canis ursaticus* (Oehrl 2013, 299). This was the classic hunt, *par force de chiens,* described and illustrated in the hunting books compiled or written by *learned* pragmatic noble authors, presenting didactic texts for courtly audiences. It was also good training and exercise for men and horses in preparation for warfare. This elitist type of hunting large and small mammalian game remained standard and current throughout the later medieval period and into the early modern period. The chase *par force* required highly trained horses, hounds and professional assistants, proper weaponry and usually plenty of time, leisure being a prerogative of the nobility. A particular bear chase described by Alfonso XI of Castile in the first half of the 14th century took no less than five days (Cummins 1988, 126–128). Gaston Fébus details the classic mounted bear hunt in Chapter 52 of *Livre de chasse,* "How to hunt and slay bears" (Paris MS Fr 616, Ch. 52 fol. 93). Finding a suitable bear to hunt was the first problem, as the hunter could not judge the sort (black or brown), age or size of a bear by its dung as it is not consistent, bears being omnivores. This is unlike the regularly shaped *fewmets* and *croties* of other game animals, although the footprints of a male bear are rounder and larger than those of a female. Alfonso XI of Castile states that if a bear had urinated close to its droppings then it was a she-bear (Cummins 1988, 122). So Fébus advises questing with a *lymerer*, a scenting hound, in the areas where the beast is likely to be feeding according to the season: cornfields, hayfields, orchards, vineyards, oak woods and beech woods. Once traced to its lair, termed *harboured* (Baillie-Grohman/Baillie-Grohman 1909, Prologue 9), and hunted, the chase is like boar hunting, using large running hounds and strong greyhounds. To slay the beast quickly is preferable, the pack of hounds bringing it to bay to be dispatched by several hunters armed with heavy spears, supported by grooms with bows and crossbows. He emphasises the dangers of tackling an infuriated wounded bear, mounted hunters keeping their distance with lance or spear, never using the sword.

A late 14th-century fresco by Maestro Venceslao (flourished [fl.] 1390–1400) at the Castello del Buonconsilio, Torre dell'Aquila, Italy, illustrating winter activities in November (Fig. 7), shows nobles armed with cross-hilted spears on horseback with hounds and assistants hunting bears in the mountains, whilst farmers drive pigs for slaughter into the walled town, contrasting the differing societal "Labours of the Months". An early modern drawing called "The Bear Hunt" by Giovanni

Stradano (Jan van der Straet/Johannes Stradanus, 1523–1605) in the Gabinetto dei Disegni e delle Stampe degli Uffizi, Florence, Italy, captures the main elements of this aristocratic practice (Fig. 8): The bear has been driven by hounds and horsemen through woodland and has been halted by a line of spearmen on foot. The elaborately dressed nobles gallop up and kill the bear, using long lances. The basic weapon featured in many such images is the cross-hilted bear spear, a stout wooden shafted spear with a broad double-edged steel head fitted with a crosspiece to stop the beast running up the shaft and killing the user. Sometimes two men were necessary to wield such a heavy weapon effectively or they worked alternately with spears, stabbing and weakening the bear for dispatching. In *Hunting Weapons,* Howard Blackmore comments: "Spears made specifically for bear hunting were of stouter proportions than the rest [of hunting spears], the blades of some are nearly 2 ft. in length". A detail from an engraving of Hans Burgkmair (1473–1531) entitled "The Bear Hunters" in the *Triumph of Maximilian* (1526; Fig. 9) shows a group of five bear hunters carrying broad-bladed spears with crossbars which are tied to the shaft just below the socket (Blackmore 2000, 88). Good examples of this type of specialist spear can be seen in the Leeds Royal Armouries Collection, Leeds, England. Nobles on foot aided by professional assistants and hounds also hunted bears, particularly in difficult mountainous terrain. A miniature entitled "The [Bear] Hunt" from a 15th-century Italian manuscript, *Tractatus de Herbis,* by Dioscorides, shows a bear gripped by a mastiff, being speared by a lone hunter in a red tunic on foot, using a cross-hilted spear while another hunter in blue, probably his servant, blows *la mort* on a hunting horn. The scene takes place on a mountainous wooded hillside, a favourite habitat of bears in Italy and elsewhere in Europe (Fig. 10).

In Christian iconography the bear had a mixed reputation. It was the attribute of St Euphemia, as bears and lions refused to savage her when she was thrown to bears and lions by the Romans, but it was also regarded as a symbol of gluttony (Clark 1984, 42, 117), sloth and clumsiness. St Ursula acquired her name from *Ursus* because of the ferocity with which she defended her 11,000 virgins (Bieder 2005, 9). St Columba of Sens was saved from being burned alive by a she-bear, and her attribute is a chained she-bear with prominent teats. A tempora on wood panel painting, "St Columba Saved by a Bear", dated 1340, by Baronzio da Rimini (fl. 1362; Fig. 11), demonstrates that bears were not necessarily regarded as evil beasts. It is not surprising therefore that several prominent artists featured bears in their paintings and drawings. Leonardo da Vinci (1452–1519) was one of these. A small drawing of a bear's head by Leonardo was recently sold for a record £8.8m ($12.1m) at a London auction. This drawing was created using the silverpoint technique on pale pink-beige paper and is among a number of the artist's small-scale drawings of animals which date back to the early 1480s. In the late 1480s he dissected the left hind leg of a bear, an animal at that time widespread in the mountains in Italy and with which he would have been familiar. Leonardo may have been interested in looking at the bear's leg and foot anatomy because of its plantigrade gait of walking like a human with its feet flat on the ground. Access to human cadavers was restricted, but by using a bear's leg he was able to produce an objective and accurate study in metalpoint and pen and ink, to which he referred twenty years later in his dissection of the human hand and foot. "The anatomy of a bear's foot", *c.* 1488–90, is in the Royal Collection, Windsor Castle, England (Clayton 2019, 64). Again, this exemplifies the anthropomorphism with which the bear was regarded at this time.

Images of bears in paintings can be included in composite groups of animals, mostly made up of hunting quarry, all of which also have their own religious and social symbolism. The Italian medalist, fresco and panel painter Pisanello (1394[?]–1455) produced such a composition, "The Vision of St Eustace". The bear is shown in a dark woodland on the upper right quartile, as if trundling on all fours out of the pictorial space behind the crucifix, perhaps symbolising the former heathen background of the newly converted Christian saint or possibly the vanquishing of the Devil, a label given to bears in some medieval bestiaries (Bieder 2005, 82). This painting is in the National Gallery, London. In the 1430s Pisanello produced "Two Bears", a study in chalks in the Codex Vallardi, 2414v, Louvre, Paris

(Fig. 12). These are realistic depictions, unusual for the time, possessing neither allegorical nor hunting significance (Bieder 2005, 84). Pisanello also included a bear amongst other animal and human figures drawn in pen and ink in the same collection of sketches.

Lucas Cranach the Elder (1472–1553) produced two surviving similar depictions of the Garden of Eden, both examples of this type of animal composition and both dated to 1530. One version of "Adam and Eve in the Garden of Eden" is in Dresden at the Staatliche Kunstsammlungen, Gemäldegalerie Alte Meister, 1908 A, the other one in the Kunsthistorisches Museum, Vienna. Both versions feature bears in anthropomorphic modes. The foreground of the Dresden version is dominated by images of the beasts over which God gave Adam dominion. Most of the animals are in pairs, and this being Paradise, the hunters and the hunted rest and graze harmoniously together (Campbell 2007, 92–95). A pair of bears gambol playfully like human lovers in the mid-right side of the panel, reminiscent of Gaston Fébus's belief that bears made love like humans. In the Vienna version of "Adam and Eve in the Garden of Eden" a pair of bears sit companionably together like man and wife, at the base of two trees, again symbolic of love and marriage, in the centre of the pictorial space.

Some of the large-scale hunting pictures by Lucas Cranach the Elder, himself an enthusiastic hunter and hunting companion of his lord, Prince-Elector of Saxony Frederick the Wise (r. 1486–1525; cf. Kuenzel 1973, 28; Almond 2009, 12), contain detailed and lively depictions of bear hunting. In the upper left quartile of "The Deer Hunt/Hunting near Hartenfels Castle, 1540", now at Cleveland Museum of Art, USA, the bear is being attacked by hounds and huntsmen, both mounted and on foot, with long bear-hunting spears. Some of the hounds and one hunter are already dead or incapacitated (Oehrl 2013, 300). The upper right quartile shows boar hunting using the same *par force de chiens* practice. This detail can also be seen in "Hunt in Honour of Charles V at Torgau Castle" (1544), now at the Museo Nacional del Prado, Madrid (Fig. 13). Both bear- and boar-hunting cameo-scenes included in the background are physically remote in location and allotted picture space compared to the central subject of the *grande battue.* The main event is clearly the organised mass slaughter of red deer harts and stags by royal and courtly hunters, a practice fashionable at that time. The strategic placing of the three quarry beasts probably represents the relative status and importance of red deer hart, boar and bear to courtly German hunters.

A common element of the majority of these bear hunting images is the harrying, wounding and gripping of the beast by hounds and huntsmen before it can be effectively dispatched by one or more noble participants. Such a large, ferocious and dangerous beast must be weakened. Gaston Fébus is most insistent on the necessity of the practice in Chapter 52 of his manual (Gaston Phébus, 56–57). This repetitive element highlights and reminds the audience of the dangers of combatting such a large, powerful and angry predator and emphasises the courage of the courtly hunter.

Bows were also used by both common and noble bear hunters. "Bear and Boar Hunting", an illustration from a 13th-century Greek manuscript of *De Venatione* by Oppian (Fig. 14), currently held in the Biblioteca Nazionale Marciana, Venice, Italy, features in the top half of the page a kneeling hunter releasing his longbow at a grazing bear. Crossbows, rather than longbows, tended to be more favoured by aristocratic hunters as longbows were regarded as the weapons of war and hunting characteristically used by commoners. A miniature from a copy of *Livre de chasse* in the Bibliotheque Mazarine, Paris, shows a red-hatted hunter, probably a courtier from his dress, servant and hounds, shooting a crossbow at a bear which has killed or mauled three of his six hounds, the action taking place in wooded hills (cf. Fig. 4).

Other weapons used include swords and – by a hardy few dedicated hunters such as Maximilian I – hunting knives. Marginal pictures in Walter de Milemetre's *De Nobilitatius, Sapientiis Prudentiis Regum*, dated 1326, include scenes of bears and lions being attacked with "great hunting swords" (Blackmore 2000, 2). Gaston Fébus advised against using a sword against bears, unlike one can do with a wild boar (Gaston Phébus, 57). However, killing a bear with a sword or a knife was obviously

regarded as a particularly heroic deed, because the proximity between bear and swordsman is much closer than with a spear (Oehrl 2013, 305). In the late 14th century Fébus gave specific instructions that the sword used to kill a wild boar should have a blade 4 ft. long, the top half being left blunt to avoid cutting the hunter's leg when in close action. This longer, heavier blade soon became standard for boar hunters (Baillie-Grohman 1903, 164; Blackmore 2000, 3). It is possible that this type of robust double-edged sword was also used by some bear hunters although it was perhaps too unwieldy for close combat. "Study for the Bear Hunt", an oil on wood sketch, dated *c.* 1639, for a series for the Alcazar, Madrid, by Peter Paul Rubens (1577–1640; Fig. 15) highlights two mounted hunters in this heroic mode of stabbing a standing enraged bear with short swords. Another bear is being savaged by hounds, more of which are dead or wounded, with hunters armed with spears in the background.

Some dedicated hunters, wearing protective plate armour, tackled bears on a one-to-one basis, regarding bears anthropomorphically as bestial warriors, and the intention to meet the beast in such close personal combat clearly belongs to the aristocratic domain (Oehrl 2013, 304). The two remarkably human physical features of an angry cornered bear, fighting on its hind legs and the ability to parry a spear with its paw or snout, are frequent motifs in bear hunting iconography and could be termed as an anthropomorphic fighting style. This manlike behaviour must have been striking and was important to bear hunters in ancient and medieval times. In terms of the aristocratic chase of the Middle Ages, the bear probably appeared as a kind of super-human combatant, the most appropriate enemy for an ambitious knight to prove himself against and to compete over with his peers (Oehrl 2013, 305). A Netherlandish engraving by Jan Collaert (1566–1628) shows this type of personal bear-combat (Fig. 16). The image was executed after an illustration (plate 26) entitled "Men in Heavy Armour Attack Bears by Stabbing them with Daggers in the Vitals" by Jan van der Straet (Johannes Stradanus, 1523–1605), taken from *Venationes Ferarum, Avium, Piscium* (Of Hunting: Wild Beasts, Birds, Fish), published by Phillipus Gallaeus of Amsterdam. Three knights on foot in plate armour use long narrow-bladed daggers to fight bears in front of a den, watched from a safe distance by onlookers. At this late date, this sort of event may well have been staged, but the inclusion in the illustration of the bears' den gives the scene an air of "wildness" and therefore authenticity.

Unsurprisingly, bear hunting also features as a major subject in European tapestries, the most expensive and elitist art medium in the Middle Ages. "The Boar and Bear Hunt", a panel of the Devonshire Hunting Tapestries, dated to 1425–1430 (Fig. 17), now in the Victoria and Albert Museum, London, and probably manufactured at Arras, France, shows a very busy conventional aristocratic hunting scene, the animals almost lost in the mass of high-status males and professional huntsmen engaged in hunting tasks, with exotically dressed noblewomen looking on. Bear hunting is shown on the right of the tapestry, and the hunters are using spears to kill several animals. A second tapestry, "The Otter and the Swan Hunt" (Fig. 18), also includes two bear hunting scenes. In the right foreground two elaborately dressed beautiful ladies are portrayed unusually close to the central bloody and dangerous action of the bear being dispatched by a noble hunter using a sword, one of the ladies restraining her hound by its collar. The bear is firmly gripped by hounds and a huntsman. However, this tapestry is subtly different from "The Boar and Bear Hunt" panel in its portrayal of the hunters, who wear moustaches or beards, some have turbans and two ride camels. In a second bear hunting scenario, top position in the centre, a felled hunter lies beneath the enraged bear, desperately thrusting a short, curved sword like a scimitar up through the bear's body. This "oriental" exoticness may indicate an increasing awareness of the shrinkage of wilderness and suitable bear habitat in northern Europe, the bear being regarded as a geographically remote quarry (Cummins 1988, 120). On a smaller scale, a French School wool tapestry entitled "The Bear Hunt" ("Chasse à l'ours"), dated to 1420–1450 (Fig. 19), in the Burrell Collection, Glasgow, Scotland, possibly made in Arras, features a richly dressed nobleman and his lady in a wooded landscape with *milles fleures,* perhaps a park, overlooked by a castle. Their hound is savaging a small bear, presumably a cub. Perhaps this is not only

good training for a young hound, but it also provides "an amusement" for the young lady who will not be involved in the brutality and danger of the proper bear hunt. The panel may thus symbolise noblewomen's passive roles on the margins of this particular alpha-male type of dangerous big game hunting, those roles including attendance at the climax, applause and praise for the brave hunters. Images of women portrayed at the close proximity of the demise of a bear, as in the Devonshire Hunting Tapestry example, are rare.

Visual sources can apparently provide a wealth of information on what hunters wore for bear hunting. The problem is how much reliance can be placed on illustrations, most of which are decorative and have either a didactic purpose in the case of the hunting manuals and treatises, or make a status statement especially in the case of tapestries. In his edition of William Twiti's *The Art of Hunting*, Bror Danielsson writes: "As yet (c. 1300) there did not exist any special hunting dress. Everybody moved about in their everyday dresses, varied according to social status, even though the colour might be adapted to the environment" (Danielsson 1977, 23). Certainly, it appears that aristocrats and courtiers dressed up increasingly beyond practicality as we progress from the later Middle Ages into the early modern period. It has already been demonstrated that bear hunting required some specialisation in weaponry, but apart from some hunters wearing protective armour for individual "bear combat" it did not necessitate particular forms of dress. Contemporary images show that *par force* hunting dress was basically the same for whatever animal was being pursued on horseback with a mixed pack of hounds, the aristocratic technique and attendant procedures dictating the clothing. The colour of clothing is debatable. John Cummins comments that there appears to be little uniformity in the colouring of hunting garments in medieval illustrations, although there can be some consistency within one manuscript, such as between mounted hunters and assistants on foot. The present author discusses the use of camouflage in *Medieval Hunting*, but there is no specific imagery evidence that green clothing was used by bear hunters as was advised for serious deer hunters (Cummins 1988, 179; Almond 2003, 100). The illustration (detail) of "The Bear Hunters" by Hans Burgkmair (1473–1531) shows five bear hunters carrying bear spears (cf. Fig. 9), dressed in elaborately-styled slashed tunics and breeches, typical of courtly hunters of the Maximilian regime, with no concession to concealment. Similar modes of courtly hunting dress can be seen in the twelve months of hunting scenes of *Les Chasses de Maximilien* tapestries, woven in Brussels by the 1530s (Almond 2003, 49–50). The conclusion must be that contemporary illustrations may not always have reflected real dress codes in the hunting field, including bear hunting.

Bears were also trapped in many ingenious ways by the rural peasantry protecting their crops, stock and lives. Gaston Fébus mentions that nets, snares and traps may be used to capture bears (Gaston Phébus, 57). Bears love honey and were notorious for plundering beehives. A 15th-century Italian School miniature "Collecting Honey" from *Tractatus de Herbis* by Dioscorides, now in the Biblioteca Estense, Modena, Emilia-Romagna, Italy, shows a bear raiding and overturning two beehives (Fig. 20). The peasant woman at the chaotic scene looks distraught at the loss of her honey and her bees escaping. A wooden carving, probably medieval, in the cathedral at Toledo, Spain, features a bear on its hind legs plundering a cylindrical straw bee skep, being attacked by a farm dog (Fig. 21). In addition to protecting crops and livestock, a bear carcass was much prized, providing not only much needed protein but also valuable fur pelts for bedding, clothing and trimmings, claws, teeth and bones. Fébus mentions that except for its paws, bear meat is not very tasty, but its fat can be used to make ointments for gout and in a tonic for the nerves (Gaston Phébus, 26). An 11th-century miniature illustrating bear hunting from *The Cynegetica* by Oppian of Syria, written in the 3rd century AD, now in the Biblioteca Marciana, Venice, shows two rustic hunters (Fig. 22), one armed with a bow and quiver, the other pointing at a bear enmeshed in a net securely tied to a tree.

Spring-traps set in fence or hedge gaps were a common method used by peasants to protect vineyards and orchards against the predations of large animal poachers, including bears. A trip-device

in the gap released a spear or bolt fixed to a bent bough which pierced the animal's flanks (*Livre de chasse*: Paris MS fr 616, Ch. 62, fol. 106v; Cummins 1988, 241; Almond 2003, 107). This method is shown in an engraving after an illustration in one of the 14th-century copies of *Livre de chasse* (Fig. 23). The bear's flank has been pierced by a spear, released by triggering a bent bough in a fence gap. A woodcut "Reynke de Vos" (Reynke the Fox) from an *incunabula* (early printed book) printed by Hans van Ghetelen (before 1480 – before 31.1.1528), Lübeck, Germany, 1498, now in a private collection, shows peasants beating up a bear they have trapped in a press.

Bear-baiting was another aspect of Man's relationship with bears, connected to and dependent upon hunting/trapping and perpetuating the violent co-existence of humans with these large dangerous predators. The tradition of bear and other animal baiting probably originated in the *venationes* of the Roman arena (Blackmore 2000, xxiii; see also O'Regan, this volume). Artificial or imitation hunting, it was widely practised in England from Anglo-Saxon times and was specifically connected with the royal courts (Oehrl 2013, 309). Animals were trapped in the wild or bred in captivity and exported all over Europe. There were no wild bears in the British Isles in the later Middle Ages, so bears for enclosed park-hunting and baiting were imported, probably from Scandinavia. The unfortunate bear was chained to a pole, often handicapped by having been blinded or having had its claws cut off, and a group of strong and aggressive dogs were set on him. Betting on the outcome drove this brutal spectator sport, which remained popular in England and other European countries well into the 19th century (Oehrl 2013, 309). In the Middle Ages the specialised servant in a great household who was responsible for looking after and presenting the bears used in this activity was the bear-ward or *Ursarius*. An example from documentary sources is Master Spernellus who was the bear-ward at Richmond Castle for the Earls of Richmond, Yorkshire, England, in the mid-1200s. He had a generous salary, accommodation and after retirement a pension and house (according to Richmond Castle signage). On the *bas de page* of Psalm 88, fol. 161, of *The Luttrell Psalter*, Add. 42130, an East Anglian prayer book dated *c.* 1325–1335, housed in the British Library, a chained bear is being attacked by four dogs, encouraged by three men; one dog is seized in its forepaws (Fig. 24). The keeper of the bear, the *Ursarius*, supervises the fight with a stick and long club.

Murals on the walls of the Turret Room at Madingley Hall, near Cambridge, England, dated to between 1605 and 1633, show sporting activities in the surrounding park, including separate images for bear hunting (Fig. 25), boar hunting, and falconry. Both mammals were extinct in the wild in England, so they would have been brought in for the purpose of hunting as a high-status sport and spectator event, clearly viewed by family, friends and guests from the Turret Room. The gentleman-hunters on horseback and the more plainly dressed servants on foot are portrayed using spears to slay the beasts which are being attacked by mastiffs and greyhounds. The wall paintings were probably commissioned by Sir Edward Hynde, the owner of Madingley Hall at this time and a noted enthusiast of hawking, hunting and animal baiting (Almond 2003, 34). It may well be that Sir Edward Hynde is portrayed as one of the mounted hunters.

Bear hunting by royal and aristocratic hunters continued and flourished well into and beyond the early modern period, aided by the increasing use of sporting firearms. W. A. Baillie-Grohman comments on the vast numbers of game killed by the two Electors of Saxony, John George I (r. 1611–1656) and his son John George II (r. 1656–1680), "probably the greatest slaughterers of game known in modern history", which included 238 and 239 bears, respectively (Baillie-Grohman 1896, 169–170). The vast majority of these bears were presumably shot, having been beaten from covert, driven and funnelled past shooting stands like other game, rather than hunted *par force de chiens,* although this ancient practice also continued in the forests of Europe. These figures of game killed in one region of Europe over many years are a critical indication of the unknown but undoubtedly vast numbers of game which existed at that time and until relatively recently, a factor we tend to overlook in our understanding of game and hunting in the later Middle Ages and early modern period.

The close and critical examination and assessment of art historical sources illustrating bear hunting, supported and reinforced by reference to contemporary texts, provides valid answers to the issues posed in the opening paragraph of this paper. Firstly, bear hunting was clearly a royal and aristocratic sporting activity, carried out by male elites as part of their public and private assertion of their superior social position. Secondly, these elites hunted bears in particular ways; on horseback with hounds, classic *par force de chiens,* and on foot with hounds and attendants. These socially acknowledged and approved methods of bear hunting required some specialisation in appropriate weaponry: long sturdy cross-hilted bear spears. Bears were also driven by hounds and hunters into nets. Wounding and holding bears before dispatching them was an accepted essential practice. No special clothing was worn, fashion dictated design rather than practicality. Some hunters wore protective plate armour in close "bear-combat". Bears were also killed by other non-sporting means for different reasons; this was not regarded as "hunting" by the social elites. Thirdly, bear hunting was clearly regarded as a special activity, a test of manhood, a demonstration of fighting skills and personal courage highlighting the warrior codes of the aristocratic knightly domain. Although the red deer hart and stag, fallow buck, and boar were given "noble" status and rated as worthy opponents, no other quarry beast engendered so much respect as the bear. This was not only because of its size and ferocity but more importantly the anthropomorphic habits of its sex life (wrongly assumed), upright shambling gait and fighting stance, unique ability to use its forepaws as weapons and parry thrusts, or pluck out arrows and knives. A bear acted like a giant deranged human when cornered, a monster from ancient legend and nightmare. This beast was the ultimate opponent for the courtly knight and hunter.

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Fig. 1. Bear Hunting, Roman mosaic, 4th century BC; Museo della Civilita Romana, Rome, Italy (© Bridgeman Images).



Fig. 2. "Game – The Animals you can Hunt", in De Venatione, *by Oppian, Greek School, 13th century (© Bridgeman Images).*



Fig. 3. "Of the Bear and its Nature", in Livre de chasse, *French, late 14th century; Bibliotheque Mazarine, Paris, France (© Bridgeman Images).*



Fig. 4. "How to Hunt and Slay Bears", in Livre de chasse, *late 14th century; Bibliotheque Mazarine, Paris, France (© Bridgeman Images).*



Fig. 5. Mounted hunter spearing a bear. MS Egerton 1146, fol. 11v, German, 1475–1485; British Library (© Bridgeman Images).



Fig. 6. Garlanded hunter on foot spearing a bear. MS Egerton 1146, fol. 20r, German, 1475–1485; British Library (© Bridgeman Images).



Fig. 7. Activities for the month of November. Fresco by Maestro Venceslao, Italian School, 1390–1400; Castello del Buonconsilio, Torre dell'Aquila, Italy (© Bridgeman Images).



Fig. 8. "The Bear Hunt". Drawing by Giovanni Stradano (Jan van der Straet), Flemish, mid-16th century; Gabinetto dei Disegni e delle Stampe degli Uffizi, Florence, Italy (© Bridgeman Images).



Fig. 9. "The Bear Hunters" (detail), from The Triumphal Procession, Triumphs of Maximilian I, *by Hans Burgkmair, German, 16th century (© Bridgeman Images).*



Fig. 10. "The [Bear] Hunt", from Tractatus de Herbis, *by Dioscorides, Italian School, 15th century; Biblioteca Estense, Modena, Emilia-Romagna, Italy (© Bridgeman Images).*



Fig. 11. "St Columba Saved by a Bear", from Episodes of the Life of St Columba, *by Baronzio da Rimini, Italian School, 1340; Pinacoteca di Brera, Milan, Italy (© Bridgeman Images).*



Fig. 12. "Two Bears", chalk study from Codex Vallardi, by Pisanello, Italian School, mid-15th century (photo © RMN-Grand Palais [musée du Louvre] / M. Urtado).



Fig. 13. "Hunt in Honour of Charles V at Torgau Castle" (detail), by Lucas Cranach the Elder, German, 1544; Museo Nacional del Prado, Spain (© Bridgeman Images).



Fig. 14. "Bear and Boar Hunting", in De Venatione, *by Oppian, Greek, 13th century; Biblioteca Nationale Marciana, Venice, Italy (© Bridgeman Images).*



Fig. 15. "Study for the Bear Hunt", for the Alcazar, Madrid, by Peter Paul Rubens, c. 1639; Cleveland Museum of Art, Ohio, USA (© Bridgeman Images).



Fig. 16. "Men in Heavy Armour Attack Bears by Stabbing them with Daggers in the Vitals", plate 26, engraved by Jan Collaert after Jan van der Straet, from Venationes Ferarum, Avium, Piscium, c. *1600; private collection (© Bridgeman Images).*



Fig. 17. "The Boar and Bear Hunt", from The Devonshire Tapestries, Arras, 1425–1450; Victoria & Albert Museum, London, UK (© Victoria & Albert Museum).



Fig. 18. "The Otter and the Swan Hunt" (detail), from The Devonshire Tapestries, Tournai, 1425–1450; Victoria & Albert Museum, London, UK (© Victoria & Albert Museum).



Fig. 19. "The Bear Hunt", "Chasse à l'ours" tapestry, French School, Arras, France, 1420–1450; Burrell Collection, Glasgow, Scotland (© Bridgeman Images).



Fig. 20. "Collecting Honey", from Tractatus de Herbis, *by Dioscorides, Italian School, 15th century; Biblioteca Estense, Modena, Emilia-Romagna, Italy (© Bridgeman Images).*



Fig. 21. Bear plundering a bee skep, wooden carving, Spanish, undated; Toledo Cathedral, Spain (© Bridgeman Images).



Fig. 22. Bear Hunting, miniature from The Cynegetica, *by Oppian, Venetian, 11th century; Biblioteca Nationale Marciana, Venice, Italy (© Bridgeman Images).*

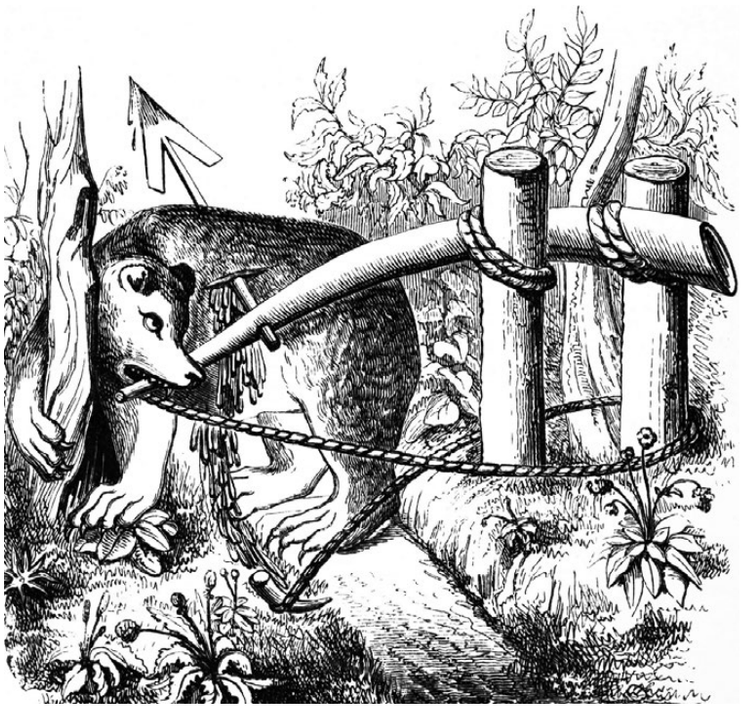


Fig. 23. Bear caught in a spring trap, engraving after Livre de chasse, *French, late 14th century; Bibliotheque Mazarine, Paris, France (© Bridgeman Images).*



Fig. 24. Bear-baiting, bas-de-page *illumination, psalm 88, from the* Luttrell Psalter, *English, 1325–1335; British Library, London, UK (© Bridgeman Images).*



Fig. 25. "They're going on a bear hunt", wall painting, English, 1605–1633; Turret Room, Madingley Hall, University of Cambridge UK (© University of Cambridge, UK).

Animal agency (northern Europe)



He becomes a credit to his Master

Martin the dancing bear and its bearward from the late 19th-century children's book "The Life of the bear" (Anonymous [Author of "The life of an elephant"], The life of a bear, his birth, education and adventures. New edition London 1901 [first published 1874]). This book has a strong moral undertone to instruct the young readers to obey their elders. Notably, around that time, also the Teddy-bearisation took place (see O'Regan, this volume).

Posthuman bears: Sight, agency, and baiting in Early Modern England

By Liam Lewis

Keywords: Posthumanism, companion species, agency, Early Modern, bear baiting

Abstract: In Early Modern England it would have been common to see a bear in major towns. Bears were baited in arenas for entertainment and spectacle in ways that deprived them of agency while simultaneously bolstering human exceptionalism. However, looking closely at bears from cultural, social and biological perspectives, it becomes increasingly clear that there was more to these encounters than first meets the eye. Bears would have been cared for, as well as exploited by, their companion bearwards, and accounts of bear baiting emphasise how some bears were blind for the sport. Reading these encounters with a posthuman lens, attentive to asymmetrical power relations and attuned to shifting categories of the human, this essay demonstrates how bears and bearwards were at once companion species, even as the exploitation of bears brought into question the types of agency and encounter at work in the baiting arena.

Encounters

In his now seminal address *The Animal That Therefore I am (More to Follow)*, Jacques Derrida turns his intellectual prowess to an unlikely little creature – his cat. Finding himself naked before his cat in his bathroom, he notices the curious effect of the cat's "insistent gaze". Derrida feels a peculiar *malaise*, instigated by the benevolent yet pitiless, surprised yet cognisant animal, who has "the gaze of a seer, visionary, or extra-lucid blind person" (Derrida 2002, 372). Ruminating on his feeling of shame when being looked at, Derrida considers the nature of relations between human and nonhuman animals in the context of Western modernity, including ethics and ontological difference. Inspired by his encounter with his cat, he dwells on sight to introduce a sensory dimension to the enquiry into the human/animal distinction. In response to Derrida, Donna Haraway suggests that the cat's gaze made the philosopher realise that he was "in the presence of *someone*, not of a machine reacting" or an automaton as René Descartes had suggested about animals in the 17th century.[1] Nevertheless, Haraway argues, while Derrida did not fall into the trap of "making the subaltern speak" by giving his cat speech, he does not seriously consider an alternative way of engaging with the nonhuman animal. What Haraway is looking for is an encounter that sets human and nonhuman as companion

1 Haraway 2008, 19, my emphasis. The reference to animals as machines is an echo of Descartes. See Cottingham et al. 1985, vol. 1, 139–141.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 175–183 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134333

species (Haraway 2003). This is an encounter between species that would risk "knowing something more about cats and *how to look back*, perhaps even scientifically, biologically, and *therefore* also philosophically and intimately" – a project that is truly posthuman in scope (Haraway 2008, 20).

Haraway argues that Derrida failed a simple obligation of companion species because his *looking* did not fully engage with the responsivity of the other. The human part of a companion species has a responsibility to become curious about what the animal "might actually be doing, feeling, thinking, or perhaps making available to him in looking back" (Haraway 2008, 20). Such curiosity has the power to destabilise the modernist category of "Man", restricted to (usually) white, wealthy, educated, Western males, and therefore excluding women, the poor, people of colour, and disabled people, as well as nonhuman animals. It is precisely this notion of companionship that posthumanism seeks to explore in an era when humankind is increasingly divorced from the realities of animal suffering. As Bénédicte Boisseron remarks, "domestication has enabled creatures who act like us […] but who may not think like us or share a similar *Umwelt* […] to share our daily life", especially because animals cannot speak, and thus "can be thought only in terms of 'what if?' – What if they did judge us?" (Boisseron 2018, 171). Likewise, much ink has been spilled trying to fathom what really happens in the human psyche, in our biology, and in social transactions, when we engage with animals as beings, as property, or as companions (Leduff 2003; Hearne 2007; Deckha 2021). But what would happen if the animal looking back were not a cat waiting for her daily feed, but rather, a bear? What would Derrida's response have been if he had looked not into the eyes of *Felis silvestris catus* but of *Ursus arctos*? This is not a wild, foraging bear, or even one found in a modern zoo, but rather the tamed brown bear. For this thought experiment it is necessary to go back in time to the Early Modern period when it would have been normal to see or hear a bear walking through one of the major English towns.

In modern-day Britain, we tend to think of encounters with megafauna such as bears in isolated terms. Bears either haunt the enclosures of zoos or remind us of a bygone era in which bears had considerably more space to roam away from human habitation. Despite having probably become extinct by the early Bronze Age in Britain, bears were a common sight in English towns in the Early Modern period as a consequence of the popularity of bear baiting (O'Regan 2018; 2020). Baiting entailed setting dogs upon a bear tied to a stake; bears were thus intrinsic to a variety of social and economic interactions as baiting rivalled commercial theatre as a spectator sport. Contemporary accounts record that animals such as bears, bulls, horses, and monkeys were brought into arenas and set upon by dogs, and not always with the aim of killing the animals involved, although a great number of dogs were killed in fights with larger fauna.[2] Much of our evidence for bear baiting in this period comes from travellers' accounts, the rare diaries of bearwards (those who owned and baited bears), and the archaeological record, which provides evidence that bears were exploited from the Medieval to Victorian periods for baiting, skins, or for use as commercial products such as bear's grease. It is likely then, that walking the streets of Early Modern England one may have stumbled not only across a cat or a dog, but also a bear.

The encounters generated by bear baiting in Early Modern contexts force further reconsideration of the nature of relationships between bears and humans in urban, performative contexts. The urban ecologies in which these animals existed and fought were the end points on long routes of animal trade, which are not yet fully understood (Davies in print). In London the Bear Garden was a popular arena for the sport and attracted tourists in the same fashion as royal palaces, St Paul's Cathedral, or the menagerie at the Tower of London (Scott-Warren 2003, 70). However, as Przemysław

2 See the Box Office Bears website for further details and analysis: https://boxofficebears.com; last accessed 26 September 2022. See also Höfele 2011, 1–2, 12. An earlier study of baiting in Early Modern England is provided by Daigl 1997.

Pożar notes, "the stench of animals and their carcasses can all be seen as aspects of London's sinister or 'disturbing' side, especially when viewed against 'the instability of the category of the human'" (Pożar 2021, 101–102). On the reverse side of this coin, many bears would have been intimately acquainted with the sights and sounds of human habitation in Early Modern England, although some were blind and deprived of their visual senses for baiting. In terms of encounters the blind bears render Derrida's visual model for ethical enquiry with the nonhuman significantly more complex as a methodology for evaluating human/animal relations. The primacy of the visual is a particularly humanist perspective, bolstering the dominance of vision in human culture, which restricts the possibilities of encounter to normative sensory experiences. These encounters force us to think beyond Derrida's shame, especially when violence, disability, and exploitation are integral components of what it means to be posthuman or a companion species.

Companion bears

Using the word "companion" to describe the relationship between humans and bears in Early Modern England is not to suggest that these two species shared a cosy relationship similar to that enjoyed by many humans and domesticated pets today. Rather, the term is a posthumanist one that reveals our increasing understanding of the social, cultural, and biological interactions that inflect human/nonhuman relations, many of which lead to asymmetrical power relations. As Cary Wolfe notes, humans and animals "may share a vulnerability and passivity without limit as fellow living beings, but what they do *not* share equally is the power to materialise their misrecognition of their situation and to reproduce that materialisation in institutions of exploitation and oppression whose effects are far from symmetrical in species terms" (Wolfe 2010, 95). This is true of Early Modern baiting, which provided an arena in which to articulate notions of human superiority over others (Fudge 2000, 8). The decline of the bear's status as a cultural symbol, combined with the reality of their treatment in the arena, meant that the conditions in which they were kept and baited deprived them of agency in fundamental ways.[3]

Although not all Early Modern accounts of bear baiting refer to blind bears, most do convey the brutality of the sport. The mid-16th-century Italian traveller Alessandro Magno described a baiting in vivid detail. In this case the bears are not described as blind, but the account reflects bears' low status and brute strength. Writing about an arena in London, he recounted how over two hundred dogs used for baiting bulls were kept in small kennels separated from each other, while bears and bulls were kept in other houses around a central arena. Magno describes how, on Sundays, everyone watched the dog training, firstly attacks on a horse and monkey in the ring with five or six young dogs, before moving to the more experienced dogs. He offers a positive review of the activities: "In this sport it is *wonderful* to see the horses galloping along, kicking up the ground and champing at the bit, with the monkey holding very tightly to the saddle, and crying out frequently, when he is bitten by the dogs". Then they bring out the bears and bulls: "After they have entertained the audience for a while with this sport, which often results in the death of the horse, they lead him out and bring in bears – sometimes one at a time, sometimes all together. But this sport is *not very pleasant to watch*. At the end, they bring on a fierce bull and tie it with a rope about two paces long to a stake fixed in the middle of the ring. This sport is *the best one to see* and more dangerous for the dogs than the other: many of them are wounded and die. This goes on until evening" (Barron et al. 1983, 143–144; all emphases my own). Like the gladiators or wrestlers of their day, bears and bulls took the brunt force

3 For a book-length argument tracing the outline of the bear's decline as a cultural symbol, see Pastoureau 2011.

of this sport and would have fought repeatedly over long periods of time, even as dogs were used as cannon fodder for the spectacle.

Behind the spectacle of baiting, contemporary records suggest that special care was made to ensure that bears were ready to fight again another day. A typical bear used for baiting would have been kept well enough to enable it to fight continuously over long periods of time, reflecting its high socio-economic value. Because of the brutality of baiting, bears would have needed the constant care of their companion bearwards, especially when travelling between cities or counties. A good example of this is one contemporary inventory that records the oil used for applying to and caring for a blind bear, which featured as an outgoing cost in a bearward's "diary" from 1608 (Davies 2021). Studies of modern remains of captive bears in Europe and South East Asia have shown that captivity causes dental problems, perhaps due to chewing bars, and there are high levels of osteoarthritis and skeletal pathologies, which may in part be due to age or activity levels (O'Regan/Kitchener 2005). Consistent rounds of dogs set in the Early Modern baiting arena put bears under constant stress, especially as the instinctive reaction for bears feeling threatened (by humans at least) is to flee unless they are caring for or protecting offspring (Krofel 2019, 190). The baiting arena removes the possibility of flight, and capitalises on bears' innate strength, which would have forged the appearance of a bottomless source of able-bodied stamina, in which the bear could choose to fight and survive. Bear baitings thus revealed an undercurrent of radical inequality that is brought into relief by a central tenant of crip theory – that "like compulsory heterosexuality […] compulsory able-bodiedness functions by covering over, with the appearance of choice, a system in which there is actually no choice" (McRuer 2006, 8).

If personal accounts or reflections on the nature of the relationship between bears and their bearwards existed, they have been lost to time or are yet to resurface. However, knowing that these companion relationships must have existed forces us to think deeply about the posthuman implications of such partnerships. This relationship was a form of radical inequality, beginning with capture or birth in captivity, transportation (possibly over long distances), and finally the baiting arena (Cuyten/Convery 2019). Elizabeth Baldwin has suggested that one John Seckerston, the innkeeper of the Bear Inn in Nantwich, was both a bearward and a bear-breeder, who had four bears in his stable at the time of the 1583 great fire that destroyed most of the town (Baldwin 1998, 98). Seckerston, or his associates, travelled widely with bears, perhaps even tracing routes as far as Lancashire, Bristol, and Coventry (Baldwin 1998, 96). If these accounts provide only a snapshot of a broader practice of travelling with, and baiting bears, the bears of England's fighting pits were kept, cared for, and simultaneously brutally exploited by humans across the country.

Descriptions of bear baiting from Early Modern England clearly demonstrate the gap that exists between humans and nonhuman animals in terms of companion species. This is particularly striking for such a totemic species as the bear. Writers have equated bears with gods, princes, leaders and advisors, warriors, and even sexual icons across the centuries in ways that encourage us to believe that they are like us (Pastoureau 2011). This anthropomorphising is an integral component of human conceptions of bears, and thus of companion species. The anthropocentric circuit that guides much modern, Western thinking about animals, or the "mechanism underlying our current means of determining the human-animal distinction", is described by Giorgio Agamben as the "anthropological machine" (Calarco 2008, 92). According to Agamben this machine, which is the scientific and philosophical discourses that distinguish human from animal, differs over time. He highlights a distinction between the function of this machine in the premodern and modern periods. On one hand, the modern machine is post-Darwinian. It isolates the animal aspect of the human animal to exclude select agents from the category of humanity. According to Agamben, the ape-man, and later in the 20th century the Jew, are humans who are excluded as "not (yet) human" (Agamben 2004, 37). On the other hand, the premodern anthropological machine, from Aristotle to Linnaeus, works in

a symmetrical way, but in inverted form: "Rather than animalising certain aspects of the human, animal life is humanised. Human beings who take an essentially animal form are used to mark the constitutive outside of humanity proper – the infant savage, the wolf-man, the werewolf, the slave, or the barbarian" (Calarco 2008, 93). Both machines have at their centre a zone of indifference, a space of exception or caesura, which allows for the constant rearticulation of human and animal according to context.

Are the bears of Early Modern baitings an example of a modern or premodern anthropological machine? Perhaps they are both, in ways that epitomise the Early Modern period as a transformative moment in how humans and animals have shared companionship. The bear is the premodern animal humanised. This is evident not only in the custom of naming celebrity bears, such as Robin Hood, George Stone etc., which mirrors the act of colonial acquisition – but also in how baiting was set up as a spectacle in arenas not dissimilar to contemporary theatres, in which bears were the key protagonists (De Somogyi 2018). However, we can also trace through Agamben's model the ways that bears signal the operation of the modern anthropological machine. Through Early Modern baiting the humanised species that trod the pages of medieval fables and stories like the *Roman de Renart* begins to be disassembled (for the Reynard cycle see Owen 1994). Early Modern bearwards and those in the trade rebuilt bears as fighting machines, as the animal aspect of the humanised bear excludes the bear from the human realm – a shoring up of traditional distinctions between human and animal, religion and science, and nature and culture that are the key markers of Early Modern Humanism (Latour 1993, 1–16; Descola 2013, 1–88).

The impulse of Humanism bolstered the figure of Man by contrasting him with the animal, a process that in large part mirrored the biblical model of animals being placed into the charge of humans by God's command at the time of Creation (Genesis 1:28). Both the humanist and the biblical models build a hierarchy of life in which humankind holds dominion over the nonhuman – a model exemplified in acts of animal baiting for entertainment. A recent response to the humanist model, termed posthumanism, seeks not only to reconfigure animals as a catch-all category in relation to the human, but also to question the principles that underlie models of human/nonhuman distinction, such as those outlined in Agamben's anthropological machines. Wolfe defines posthumanism as "the necessity for any discourse or critical procedure to take account of the constitutive (*and* constitutively paradoxical) nature of its own distinctions, forms, and procedures". The posthumanist lens is thus distinguished from the "reflection and introspection" associated with the critical subject of Humanism, and must therefore take account of nonhuman animals not only in terms of dominion and rationality, but also of encounter, ethical enquiry, and companion species (Wolfe 2010, 122). We have already seen how such companionships in Early Modern England might be more profitably explored through thinking in posthuman terms. As we shall discover below, this process is highlighted more explicitly in the case of blind bears who, deprived of their sense of vision, nevertheless fought back.

Blind bears

The baiting of blind bears in Early Modern arenas presented a posthuman challenge to the principles of Early Modern Humanism that enabled the deprivation of bears' status and thus their subjugation by the common man. The bears of Early Modern baiting therefore articulated a problem with definitions about where to draw the line between human and nonhuman, and thus how to ascribe agency. Whereas Derrida's thought of shame was instigated by the gaze of his cat – that is through sight –, in the case of Early Modern bear baiting this field of encounter was not always possible. Deprived of vision, blind or blinded bears offered audiences an altogether posthuman spectacle in multiple ways.

Blind bears disrupted the belief that if they look back at us, bears are like us.[4] The unequal relations captured in accounts of bear baiting in which bears are reduced to blind entertainment fodder rupture well-trodden cycles of normative anthropocentrism – if they cannot look back, bears cannot be like us.

The spectacle of baiting blind bears encoded the bear in the patterns of violence instigated by the humans who owned them. In one account of Elizabethan-era bear baiting given by the German lawyer and traveller Paul Hentzner, the bear demonstrates an impressive capacity to fight back even when deprived of his field of vision. Although escape is not an option, the bear's ability to continue to fight his opponents with "force and skill" is worthy of note: "There often follows that of whipping a blinded bear, which is performed by five or six men, standing circularly with whips, which they exercise upon him without any mercy, as he cannot escape from them because of his chain. He defends himself with all his force and skill, throwing down all who come within his reach, and are not active enough to get out of it, and tearing the whips out of their hands, and breaking them" (Hentzner 1797, 30). Hentzner's travel account sharply contrasts this turbulent scene with a description of the crowd in the arena, which is full of people leisurely smoking tobacco, drinking ale and wine, and eating fruit and nuts. Despite the contrast between the actions of human baiters, human onlookers, and the bear itself, this account nevertheless portrays the baited bear as in charge of his own agency. The bear reacts, throws down its opponents, and even tears the whip out of their hands in an unexpected reversal of baiting roles. But for viewers of the fight, and readers of Hentzner's account, the true fate of the bear lies in the juxtaposition of real peril for the humans who get too close to the bear, and an underlying familiarity with the theatricality of the fight.

The key to understanding the conceptual challenge that blind bears created is the juxtaposition of the commoner with the bear. Both are categories subjugated by the exclusive humanist Man. In a pamphlet called *Worke for Armourers* published in 1609, the writer Thomas Dekker observed with some distaste a similar spectacle of bear baiting with dogs in which a blind bear was whipped. In contrast to Hentzner's travel account, Dekker focuses on the moral dimension of the baiting by using religious metaphor to transform the bear, called Hunkes, into the figure of the sinner. Although the ethical universe in which he watches the spectacle is very different to our own, he nevertheless stresses that the people who torture Hunkes are people like ourselves – colliers, carters, or watermen – workers from the streets of London: "No sooner was I entered [the Bear Garden] but the very noise of the place put me in mind of Hell: the bear (dragged to the stake) shewed like a black rugged soul, that was damned… the dogs like so many devils inflicting torments upon it… At length a blind bear was tied to the stake, and instead of baiting him with dogs, a company of creatures that had the shapes of men, and faces of Christians (being either colliers, carters or watermen) took the office of Beadles upon them, and whipped monsieur Hunkes, till the blood ran down his old shoulders".[5] Dekker's mystifying gaze on his fellow human company registers the bear baiting in quasi-religious terms through a comparison with the devilish dogs. However, it is noteworthy that Dekker's world seems upside-down when, instead of baiting the bear, the crowds take on the role of torturers or executioners. In Agamben's terms, the animal aspect of these human workers is isolated to exclude them from the category of humanity purported by Humanism. Julie Sanders observes that the mastiff dogs in Dekker's description play the role of the devils in a morality play, with the closing vision of Dekker's statement humanising and aging the bear called Hunkes (Sanders 2014, 59). Hunkes simultaneously embodies the trope of "disability as a metaphor for deviance or moral failing", which marginalises alterity through negation (Senier 2017, 277). Alongside the hybrid devil-dogs, Dekker positions the Christian men who whip Hunkes as part-men, part-creature – a dehumanisation that

4 Höfele (2011, 115–170) has shown that images of cruelty produced similar reflections in the work of writers such as Montaigne, Foxe, and Shakespeare.

5 Adapted from Dekker 1609, sig. B1v– B2r, and quoted from Sanders 2014, 58.

animalises the crowds of human onlookers. This is a move that resembles Agamben's model for the modern, post-Darwinian anthropological machine that isolates the animal aspect of the human and excludes them from humanity. To whip a blind bear so must imply a certain animalisation of the human, as an implication of an awry morality.

The act of naming bears, which was common practice in Early Modern England, brings into question the extent to which blinding bears could have been a response to increasing humanisation. In contrast to the animalisation of the human crowd, the process of naming the bear Hunkes incorporates a humanisation that resembles Agamben's premodern anthropological machine (in which animal life is humanised). But whipping a blind bear represents a gross act of inhuman cruelty. Likewise, in a contemporary letter from Edward Barrett to Edward Alleyn about animals for the Royal Game, dated 11 June 1610, the author describes how one "Littell Besse of Bromly" fought over twenty double and single "courses" with the best dogs in the country. Some of the dogs she killed outright but "the moste parte shee sent haltting awaie".[6] This humanisation and gendering of a baited bear helps to articulate the instability of the category of the human in accounts of Early Modern baiting. In both accounts, bears are named and thus humanised through a process of mirroring human culture. But it is Dekker's account – the one that humanises Hunkes – that evokes a feeling of pity when comparing the bear at the stake with London's "poor wretches" being led to the whipping posts: "Yet me thought this whipping of the blind bear moved as much pity in my breast towards him, as y(e) leading of poor starved wretches to the whipping posts in London (when they had more need to be relieved with food) ought to move the hearts of citizens, though it be the fashion now to laugh at the punishment".[7] Dekker states that he was moved to feel pity at the sight of the blind bear being whipped. Might he have been moved further to feel shame if, like Derrida, he had been able to meet the gaze of the nonhuman animal?

The types of encounter afforded by bear baiting demonstrate the importance of sight and the gaze for defining what kind of agency is at work. For Derrida, the gaze is a trigger for ethical encounter between him and his cat, but the case of blind bears introduces a dilemma to this visual mode of enquiry into the distinction between human and nonhuman. A blind bear makes what it can of the situation in which it finds itself, yet its agency is prescribed by human baiters. The bear cannot see and perhaps has to rely on its olfactory senses, which are vastly superior to the human sense of smell, but the baiting arena did not allow humans to put their own sense of smell to the test as a form of encounter. There are, of course, many sensory ways of encountering nonhuman animals, but blindness does not allow the bear to look back, as Haraway would like it to do, to present the human onlooker with the posthuman question of what the nonhuman is feeling, thinking, or making available through that encounter. This stretches the notion of companionship to its limit, and reinforces the dark undercurrent of exploitation in the partnership between human and bear, in which the bear's agency, and ability to challenge human command, is deliberately forestalled.

Conclusion

What is posthuman about a bear that lived and fought in the arenas of Early Modern England, a bear so deprived of agency that the easiest comparisons for some observers were with London's "wretches"? Bears were integral to Early Modern theatre economics and animal trade. They were bears that lived long lives and, perhaps often, fought back. They were companion species, who relied on a cross-species

6 The Archive of Dulwich College (London), "MSS 2 Dulwich Letters of PH and EA as Masters of Royal Game, 1598–1626", 013. Transcription provided by Callan Davies.

7 Adapted from Dekker 1609, sig. B2r.

partnership with bearwardens and a different species *umwelt* (perspective) to survive (Von Uexküll 2010, 45; Lewis 2022). The descriptions of bears included in this discussion demonstrate that writers in the Early Modern period did not have fixed conceptions of what it meant to be human or animal. Using Agamben's anthropological machines as tools to examine the distinctions between humans and nonhumans, it quickly becomes clear that bears straddled multiple categories in the minds of observers. They were humanised through naming, animalised alongside lower status humans, and ascribed super-human, but altogether bear-like, characteristics such as strength, stamina, and perhaps courage, which brought into question the more rigid conceptions of able-bodiedness and species difference that defined the humanist agenda.

In a study of surface encounters with the nonhuman, Ron Broglio asks whether the Humanities – a human endeavour traditionally for humans – can be "hospitable enough to give itself over and recognise our lives as entwined with other beings?" (Broglio 2021, 138). Those who work to uncover the records of humans and animals involved in bear baiting and to understand the lives of animals, know that we must recognise the entanglements in which bears were caught up – social, economic, and biological – which were at once exploitative, cruel, and violent. By looking at animals, and allowing them to look back, the Humanities can be hospitable enough to show that our entanglements are deep and entrenched. But even if bears cannot look back, understanding their lives helps to uncover the diverse ways that they were ascribed agency by bearwardens, writers, and onlookers. The Early Modern bears that we study will never benefit from the pursuit of better knowledge about their lives, but perhaps in the process we will strengthen the histories we tell about animal agency and cruelty, entertainment practice, and the social worlds in which bears have wandered.

Acknowledgements

I am grateful to Sophy Charlton, Greger Larson, and Lizzie Wright for their research on the *Box Office Bears* project, and to Callan Davies, Andy Kesson, and Hannah O'Regan for their comments on this piece.

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Bears in long-term archaeo(zoo)logical studies (northern Europe)



Understanding the changing role of the bear over the long term. Only such considerations will make the longevity of certain traditions, such as bear ceremonialism, visible.

Brown bears in burials and entertainment in later prehistoric to modern Britain (*c.* 2400 BC – AD 1900s)

By Hannah J. O'Regan

Keywords: Bear baiting, iconography, prehistory, medieval, cremations, graves, Britain, Ursus arctos, *brown bear*

Abstract: The brown bear, Ursus arctos, *was a native British mammal, but is now extinct. This chapter briefly explores the history of the native brown bear before turning to the anthropogenic evidence for bears in prehistoric and later Britain. There are two main foci – bears in burials and bears in entertainment. Bear remains are very rare in Britain, but their phalanges are found in human cremations in the Bronze Age, late Iron Age and early medieval periods. The role of the bear in each period is discussed, concluding that there is unlikely to be a single association between bears and cremations that endured. Rather, bear remains are likely evidence of long-distance trade in high status Bronze Age and Iron Age cremations, and a possible indication of ancestral identity in the early medieval period. Roman and Viking bear iconography is also considered. In the Roman period jet bear figurines are associated with the graves of infants, while in the Viking Age bears are carved on stone "hogback" grave covers. Both may indicate some sort of protection in the afterlife. In contrast bear iconography in the medieval and post-medieval period is often associated with bear-baiting, where dogs were induced to attack tethered bears as a form of public (and royally sanctioned) entertainment. Some of the extensive documentary evidence for this "sport" is discussed, as is the practice of dancing bears, which continued in Britain into the early 20th century.*

Bears in Holocene Britain

The brown bear (*Ursus arctos*) has had a long history in Britain, as a native wild mammal, and as a tamed creature imported for human entertainment. The species was present in all mid to late Pleistocene interglacials, and some glacial periods, as well as the Holocene (Turner 2009; Schreve 2019). However, brown bears are unlikely to have been present in the coldest periods, particularly as much of the British Isles was ice-covered. For example, Leonard et al. (2013) modelled brown bear survival during the Last Glacial Maximum (27,000–15,000 BP) in Ireland, and concluded that bears were unlikely to have remained *in situ*, but would have recolonised once the ice sheets had retreated. An ancient DNA study by Edwards et al. (2014) of brown bears from the Yorkshire Dales indicates that the same mitochondrial haplotypes are present before and after the later cold period of the Younger Dryas (12,900–11,700 BP; cf. Rasmussen et al. 2014), which ended at the start of the Holocene. Their results suggest that either the brown bear was able to survive the Younger Dryas in a refugium in southern England or was able to recolonise from elsewhere in Europe very shortly after it had ended.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 187–208 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134334

The evidence for brown bears in the Mesolithic (9600–4000 BC, cf. Table 1) is relatively sparse, with only six localities identified so far, in Berkshire, Yorkshire, and Scotland. One is from a riverbank deposit at Eton Rowing Lake (Allen et al. 2013), and three are from caves (O'Regan 2018). None have clear evidence of anthropogenic influence. The remaining two sites are the well-known lakeside hunter-gatherer camp of Star Carr (Edwards et al. 2014) and a midden in the An Corran rock shelter on the Isle of Skye (Bartosiewicz 2012). There are more bear specimens suggested to date to the Neolithic (4000–2400 BC), but the only secure dates are for bears from archaeological sites (Yalden 1999; O'Regan 2018). One of the key issues with examining bear remains in Britain is that many have been found in cave sites, and caves are particularly prone to bioturbation, water sorting, and other taphonomic processes that can mix up material from different periods. Therefore, it is hard to take at face value the suggested dates for any bears that are not from archaeological sites, unless they have been directly radiocarbon dated. However, even with a radiocarbon date a bear specimen from a cave need not necessarily preclude an anthropogenic influence. For example, a bear canine from Greater Kelco Cave and two terminal phalanges from Sewell's Cave (both Yorkshire) were found with Roman material, but were radiocarbon dated to the Lateglacial (Edwards et al. 2014). The authors suggested that as these were the only remains of bears from these caves they could have been collected as curiosities by the Romans and deposited later (Edwards et al. 2014, 134). The securely dated Neolithic bears, always represented by a single bone or tooth, are largely from pits or ditches, and the sites cluster in East Anglia and southern England (Wiltshire and Dorset; O'Regan 2018). One of the most intriguing specimens in terms of considering human-bear interactions in this period is a single ulna from pit 11a at Down Farm on Cranborne Chase (Legge 1991). This ulna was found in a pit fill with a large number of animal bones, including a complete cattle (*Bos taurus*) cranium, which could suggest that these bones were part of a placed or structural deposit (i.e. it was not simply rubbish disposal, but had some ritual purpose or context to it; Legge 1991). However, along with other bones in the pit, the bear ulna had been gnawed, probably by dogs (*Canis familiaris*), which suggests that the bear bone was not treated with any particular reverence. Although it is only a single example, it makes an interesting contrast with ethnographic records from northern Eurasia and North America, where bear remains were often treated as important and specifically kept away from scavengers (Hallowell 1926).

A key question that is currently unanswered is when brown bears became extinct in Britain. They have been extirpated from a number of other European countries including Denmark, Ireland, Germany, and Switzerland (Pasitschniak-Arts 1993; Klassen/Gregersen, this volume; Schmölcke, this volume), likely through a combination of deliberate hunting and habitat loss. There appears to have been a staggered loss of large carnivores in Britain, with lynx (*Lynx lynx*) becoming extinct in the early medieval period (Hetherington et al. 2006) and wolf (*Canis lupus*) most likely in the medieval to early modern period (Yalden 1999), but the extirpation date of the brown bear is unknown. O'Regan (2018) examined the bear record in Britain and identified two plausible scenarios for extinction. In the first, bears became extinct in the late Neolithic/early Bronze Age (i.e. between 3000–1500 BC), while in the second, they became extinct in the first part of the early medieval period (~AD 410–700). The reason for these different scenarios is the almost total lack of bear remains in the British Bronze Age and Iron Age. The second scenario is supported by a single early medieval radiocarbon date on a bear bone from a cave in North Yorkshire, which could indicate that bears were still present in the wild at this point. However, body part analysis conducted by O'Regan (2018) found that the bones present at Bronze Age (2400–800 BC), Iron Age (800 BC – AD 43) and most early medieval sites were likely to have come from skins, but that living bears appear to have been present in the Roman (AD 43–410), medieval (AD 1066–1485) and post-medieval (AD 1485 to present) periods. This pattern was used to suggest that wild bears were either extinct or at a very low level during the Roman period, and that the bones that have been identified are likely to be from live

bears that had been imported. O'Regan's (2018) review of bears in Britain also identified two topics that are worth exploring further – the potential link between bears and human burials, and the role of bears in Roman and later entertainment. The rest of this chapter focusses on these two topics.

Bears and burials

While there is very limited evidence of bears in Britain in the Bronze and Iron Age, all of the anthropogenic examples that are present have been found with human cremations (cf. Fig. 3). Bear bones are also present in human cremations in the Anglo-Saxon period (Bond/Worley 2006; Squires 2011). In contrast, there are no physical remains of bears identified from Roman period burials, but bear figurines have been found in a number of graves (Crummy 2010). I am not aware of bear bones or figurines associated with burials of any period from Scotland or Wales, although it must be noted that owing to soil chemistry the burial record for both these countries is limited, so this absence may not be an accurate reflection of original practices.

The Bronze Age

In the Bronze Age, only one grave has been identified as containing a bear specimen. This item is particularly unusual as it is a preserved pelt (Fig. 1), and is the only non-osseous bear specimen in the British archaeological record. A human cremation was found wrapped within the pelt, and placed in an early Bronze Age cist at Whitehorse Hill, Dartmoor, Devon (Jones 2016). The cremated individual (which could not be sexed) of approximately 15–25 years of age (Mays 2016) was buried with a number of high-status objects including a copper alloy pin, a composite necklace with beads of tin, shale, amber and clay (Sheridan 2016), two pairs of ear studs (labrets) made from spindle wood, as well as a woven basket and a single flint flake (Jones 2016). Dartmoor is an upland landscape, and the cist had been cut into a hummock of peat which effectively preserved the fur, but not the skin, of the animal. The fur was examined and identified as a bear (Family Ursidae), using proteomic analysis of the hair fibres (Solazzo 2016). The pelt was from the rear portion of the bear, and likely to be from one side only (i.e. it was a portion extending from the midline of the back to the belly), and would have measured some 56 x 39 cm when unfolded (Cameron/Mould 2016). Relatively few animal skins have been identified in British Bronze Age barrows, although this apparent absence may be partly due to taphonomic factors, as skins are likely to decay in the absence of very specific burial conditions (e.g. anaerobic, very cold or very dry deposits). Jones (2016, table 21.2) summarised all known Bronze Age barrow burials and cremations that contained textiles, leather/skins, matting and basketry. Eighteen sites contained animal skins or pelts, and of these, 16 were inhumations and two were cremations, indicating that even where conditions appear favourable for skin preservation, skins are less common in cremations than inhumations. Where skins have been identified, they have almost all been from cattle, with the exception of one possible sheepskin, and three sites that have yielded wild taxa – a pine marten (*Martes martes*) and a red fox (*Vulpes vulpes*) from Gristhorpe, Yorkshire, a stoat (*Mustela erminea*) or red fox from Dysgwylfa Fawr, Cardiganshire, Wales, and a possible stoat from Cuninghar, Clackmannanshire, Scotland (Cameron/Mould 2016). However, only the Gristhorpe identifications are confirmed, as the Welsh and Scottish finds were found in the late 19th or early 20th century and have not been subject to modern scientific analysis. All of the above small carnivores can be used for their pelts, but no large carnivores have been identified other than at Whitehorse Hill. Intriguingly, Dysgwylfa Fawr and Whitehorse Hill are the only cremations in the dataset, both contained the skins of non-domestic taxa, and they are of very similar date (Whitehorse Hill dated to 1740–1560 cal. BC; Dysgwylfa Fawr dated to 1760–1410 cal. BC (see Jones 2016 for full details). This could hint at an association between cremation and carnivore pelts in the early-middle

Bronze Age, but with only two sites, and such very different taxa, this cannot be explored further at present.

A key question is whether or not the individuals creating the Whitehorse Hill assemblage would have recognised the pelt as bear, and if that recognition would have had significance for them, rather than it simply being an exotic pelt instead of the more common cattle skin. It must have been clear to the mourners that the pelt was different – the fur was thicker and curlier, but unless bears were known animals, in the absence of any claws or canines to clearly mark the pelt as that of a carnivore, a piece of skin, which when unfolded would only have been 56 cm x 39 cm, may have been valued for its expense, utility and the distance it had travelled, rather than the species it was made from.

There are two other potential Bronze Age bears from burials in the archaeological literature. The first is a very fragmentary canine that was found in the tertiary fill of a ditch surrounding a late Neolithic (2900–2350 cal. BC) long barrow in Eynesbury, Cambridgeshire (Ellis 2004). Only six other identifiable bones were found in the tertiary fills – one red deer (*Cervus elaphus*) bone and five antler fragments (Sykes 2004). Radiocarbon dating of the bear canine failed, owing to lack of collagen, so the date of this specimen remains unknown (O'Regan/Devièse in prep.). We could assume that it is late Neolithic or later, but given the Lateglacial radiocarbon dates on specimens that were thought to be Roman (Edwards et al. 2014), it is always possible that it could be from a much older animal. Whatever its date we can be sure that, given the rarity of bears in Holocene Britain, the deposition of this specimen in the barrow ditch was a deliberate act by the people who placed it there. The second potentially Bronze Age example is two reported bear claws from the lower ditch fill of an early Bronze Age cremation and cairn at Sant-y-Nyll, Glamorgan, Wales (Savory 1960). The specimens are unfortunately missing from the site archive at the National Museum of Wales, Cardiff, but the photographs included in Savory (1960, plate VII) clearly show that they are not bear claws. They look much more like the canines from very young animals (just an enamel cap with little root development or dentine), and it is not possible to confidently identify them from the photographs.

In summary, there is almost no evidence for bears in Britain in the Bronze Age, and only one grave which can demonstrably be said to have a direct link between a bear and a cremation – that of Whitehorse Hill. It is therefore unlikely that bears played any significant role in Bronze Age mortuary rituals.

The Iron Age

There are only two Iron Age sites with bear remains in Britain, and they are both graves – Welwyn Garden City (Stead 1967) and Baldock (Stead/Rigby 1986). They are late Iron Age high status cremation burials, with a considerable number of imported items including amphorae. Sealey (2009) used the amphorae and other pottery to date the Baldock cremation to 100–75 BC, and Welwyn Garden City to ~25–15 BC (Fig. 2a–b). The amphorae would have come from Italy (Fitzpatrick/Timby 2002) and therefore demonstrate considerable trading links for these individuals and their societies. At both sites the bear remains are terminal phalanges that had been burned, and they were found mixed into the human cremation deposit (Fig. 2b); three phalanges at Baldock and six at Welwyn. The Welwyn grave, of an individual identified as "probably male, probably over 25" (Powers 1967, 40–41), also contained evidence of a carnivore pelt, which had been preserved through association with a decaying bronze platter. Based on the presence of fine medullary hairs, Michael L. Ryder (cited in Stead 1967) suggested this pelt might be from a stoat. The Baldock cremation, although heavily disturbed prior to formal excavation, appeared to have had only a "token" amount of the cremated individual interred, with a total weight of cremated bone of 10.5 g (Stead/Rigby 1986). Despite this, three bear phalanges were included in the "token" deposit, perhaps suggesting that they were of particular importance. No further age or sex information is available for the Baldock individual. There is also a record of a bear phalange from Fishbourne Roman Palace, on the south coast, a site that has produced considerable quantities of continental imports from Iron Age deposits (Manley et al.

2005). The proximal bear phalange is from a ditch deposit dated to the Iron Age to Romano-British transition (AD 40–79; Busby 2017). There are three cutmarks towards the distal end of the phalange, which perhaps indicate its removal during skinning, although Kirkinen's (2017) study suggests that only the terminal and part of the intermediate phalanges are likely to be retained in a skin. Busby (2017) suggested that the presence of the phalange could be evidence that a bear was skinned on site, but it may also have come from an imported skin.

Iron Age cremations with bear phalanges are rare in Britain, but Schönfelder (1994) identified a number of other late Iron Age burials with bear toe bones, largely in Germany, with outliers in Britain (n = 2, described above), Luxembourg (n = 1) and the Czech Republic (n = 2). This suggested the two British burials could be grouped with other Germanic burials, through the presence of the bear phalanges. However, a key point to consider is that bears were still extant in much of Germany in the Iron Age (Schmölcke, this volume), making the statement that their presence in graves "display[s] the ability of the dead to hunt and protect the village economy" (Schönfelder 1994, 224), much more plausible for these sites than it is for central England, where bears are likely to have been extinct for at least two thousand years (O'Regan 2018). For the inclusion of bear within these graves to have a protective meaning, people must have been aware of bears and their potential power. As briefly discussed by O'Regan (2018), while there are statuettes of wild boars and wolves from Iron Age East Anglia, there are no recorded statues of bears, and images of bears on coins are very rare and limited to the regions closest to the English Channel. Stead (1967) catalogued seven other sites with similar grave goods to those from the cremation with the bear phalanges from Welwyn Garden City, and listed another eight "Welwyn-type" sites that were found in the 18th and 19th centuries, two of which were confirmed to be burials. This suggests that there are multiple ways of characterising the Welwyn Garden City and Baldock graves – if only the bear phalanges are considered, then they can be grouped with the Germanic graves, as suggested by Schönfelder (1994). However, if the other grave goods such as amphorae and metal firedogs are taken into consideration, they are more similar to graves from England and Gaul rather than Germany (Sealey 2009).

A key point when looking at the prehistoric findings of bears is that very few graves have bear remains, but it is true to say that the three that do have bears are all high status and associated with imported goods. Therefore it seems reasonable to say that high status people in prehistoric Britain did not necessarily have bears in their graves, but the presence of bear remains is an indication of high status.

Early medieval

The early medieval record of bears in burials is rather different. Eleven cremation cemeteries from the 5th–7th centuries AD have been identified in eastern England in a region extending from Yorkshire to Norfolk (Squires 2011). While the human remains from most of these sites have received attention, there has been much less work on the non-human remains. However, there are records of bear bones from four of the eight sites that have been studied – Sancton I, Spong Hill, Elsham Wold (Bond/Worley 2006), and Cleatham (Squires 2011) (Fig. 3). A relationship between bears and the dead is widely seen in Scandinavian practices in the early Medieval period (Lindholm/Ljungvist 2016; Kirkinen 2017), with people being buried with full skins or being cremated with bear skins or isolated claws as part of the funerary rite (inferred from the presence of bear terminal phalanges in cremation deposits; Grimm 2013). The majority of phalanges from the English sites are also terminal (Bond 1996; Bond/Worley 2006; Squires 2011), but proximal and intermediate phalanges are reported from Elsham Wold and Cleatham, along with a possible long-bone diaphysis fragment (Squires 2011; cf. Fig. 4). It seems most likely, given the paucity of other bone elements, that the phalanges from the cemeteries represent bear skins that were cremated along with the humans on the pyre. At Elsham Wold, bear bones were only found in adult cremations (n = 6), one of which was

identified as male, one as female, and four could not be sexed. In terms of grave/pyre goods, the most common items were fragments of bone combs, found in five of the six cremations containing bear. The sixth cremation had no comb fragments but did have glass globules, copper alloy globules, and an ivory fragment (Squires 2011, appendix 1). In contrast, at Cleatham, out of ten cremations with bear bones, no individuals could be sexed, and only eight could be aged (a child [5–12 years], two adolescents [12–18 years] and five adults [19+ years]). In terms of status, the cremated individuals with bear remains at Cleatham had pyre and grave goods ranging from an ivory ring and melted copper alloy (two cremations), gaming counters (two cremations), to no goods at all (four cremations; see Squires 2011, appendix 2 for full details). The differing ages, sexes, and levels of grave goods at these two sites suggests a variety of statuses for the individuals with bear phalanges, and could potentially indicate a family relationship rather than a social rank (Squires 2013). A role for bear skins rather than live bears in early medieval Britain can be supported by the fact that the only other bear bones dated to this period are also from the foot – two or more terminal phalanges from Viking Age York (O'Connor 1989), a metapodial from the Anglo-Saxon settlement at West Stow (Crabtree 1989), and a single phalange from the early medieval monastery at Eynsham Abbey (Hardy et al. 2003; see Fig. 3 for locations).

However, the ethnographic and archaeological record from North America offers an alternative explanation for sites where metapodia and proximal and intermediate phalanges are found – the possibility of bear paw amulets, or of bear paw feasting (see Waselkov/Funkhouser 2020, and references therein). Given the probable extinction of bears in Britain by this time, feasting is perhaps less likely, but the possibility of paws preserved as amulets could be considered. Indeed Bond/Worley (2006) tentatively suggested that the inclusion of bear and other wild animal remains in the cremations could relate to shamanistic practices, or certainly symbolism of the bear, given its human-like appearance (Lapham 2020). They also commented on the presence of both bear and fox bones in a single cremation from Spong Hill (no. 2890) and a single cremation at Sancton I (no. MS202, which also contained a horse). Both bear and fox are rare inclusions in the cremations, leading to the suggestion that there may be some additional but unknown significance to their placement together.

Locating the bears

Assuming that, as discussed above, the bear was likely extinct (or nearly so) in Britain; where might the bear remains in burials have come from? The young adult (15–25 years old) in the Bronze Age Whitehorse Hill cremation was interred with a necklace of amber, tin, shale, and clay beads. The amber could have been picked up from beaches on the east coast of England, although it will have originated in the Baltic (Sheridan 2016), while the nearest shale deposit is Kimmeridge, 130 km east of Dartmoor. The finished items were probably traded to Dartmoor via Wessex, over 180 km away (Jones 2016). Analysis of the amber beads found that three out of the seven were chipped or worn, indicating that they were not new when deposited in the grave (Sheridan 2016). The age of the beads contrasts with the age of the bear skin which was likely to be fairly new when deposited, as the radiocarbon dates were similar to those of the purple moorgrass (*Mollina caerulea*) that had been used as matting at the base of the cist (Marshall et al. 2016). It is evident then, that the cremated individual and the people that created the cist burial were linked into a wide trading network, which spread well into central England and beyond. By the late Iron Age, the artefacts found in the graves of the individuals at Baldock and Welwyn Garden City demonstrate that they had links that stretched as far as the Mediterranean.

Recent overviews on the genetics and biogeography of brown bears in Holocene Europe demonstrate that brown bears were already scarce in the regions closest to southern Britain by the middle Bronze Age (Crees et al. 2016; Albrecht et al. 2017; Ersmark et al. 2019). Certainly by the late Iron Age it is likely that any bear specimens would have had to have been traded over considerable

distances. It is also important to note that the published distributions of European bears are models based on a database of archaeological sites (e.g. Sommer/Benecke 2005; Crees et al. 2016; Albrecht et al. 2017). Given the potential for trade in bears and bear parts, linking their distribution to anthropogenic sites may overestimate where wild bears could be found, especially in the case of islands such as Britain (O'Regan 2018). For example, the study of Albrecht et al. (2017) on the European Holocene found that bear remains were most likely to be identified in castles and burial sites. For burials, the many Scandinavian graves that contained bears in the Roman Iron Age and medieval periods may have influenced this result (e.g. Grimm 2013; Lindholm/Ljungkvist 2016; Kirkinen 2017; see different contributions, this volume), while the data from castles may indicate animals that had been killed by the occupants (see Oehrl 2013 for a discussion of aristocratic bear hunting), or skins that had been traded from elsewhere. A modern comparator would be the presence of stuffed bears and bear skins in many British aristocratic residences in the 19th and 20th century. These bears did not live in the wild in Britain, but live animals were kept in menageries and there was a huge taxidermy trade in skins and hunting trophies (O'Regan 2020).

Where the early medieval bears were traded from is a very interesting question, and will likely only be answered with ancient DNA analysis. Viking Age Coppergate in York had wide trade networks, so the origin of the bear remains cannot be determined (O'Connor 1989), while the phalanges from the cremation cemeteries in Yorkshire, Lincolnshire and Norfolk demonstrate clear similarities between the populations. Squires (2016) performed a comparison between English and German early medieval/migration period cremation cemeteries. The earlier Roman period cremation cemeteries in Germany had a very high number of cremations with animal remains (74 %), but showed a marked reduction in the migration period to only 7 %, while the early medieval cremations from England were intermediate with 29 % (Squires 2016, 125). This pattern suggested that there are links between the cremation rites of the two countries and that these customs were probably imported into England during the early migration period and continued after they had declined in Germany (Squires 2016).

Bear material culture and graves

In contrast to the Iron Age and early medieval records of bear phalanges in cremations, there are no bear bones from Romano-British burials. However there is still an association between bears and burials, as jet bear figurines (Fig. 5) have been found in five infant graves (or probable graves) and in a probable votive deposit in eastern England, and at two sites in Germany (Trier and Cologne). The bear figurines are associated with multiple other grave goods in each case, such as jet or glass beads, lunulae, coins and other items, which together indicate an intention to protect the infants (Crummy 2010). The jet bears are small (<4 cm long) and are often pierced between the legs, or in one case through the shoulder hump, to form a bead or pendant and were probably amulets. Crummy (2010) has comprehensively described each grave and figurine, and discussed their potential importance as a symbol of protection for infants in the underworld. She notes that the richness of two graves from Colchester indicates that the families of those individuals were wealthy, but that examples of damaged or worn bears (from Malton and York) may indicate the importance of them as amulets rather than being indicative of wealth (Crummy 2010, 78). As well as the overall iconography of the bear, Parker (2018) has noted a potential link between the bears and magic in the Roman period, and particularly the carvings on the backs of three of the figurines, which appear to form a star shape (Fig. 5). These markings have previously been identified as renderings of fur, but Parker (2018) suggests that they could be a genuine attempt to link the bears with the constellations of Ursa major and Ursa minor, or the great and the little bear. This, and the ability of jet to form static electricity could indicate a magical element, especially given the heavily abraded or rubbed appearance of the bears from Malton and St Stephen's, Fishergate, York (Parker 2018). A second aspect that may have been

overlooked regarding the bears is that where there is information on the burials that were found, two of the three infants had been cremated (Crummy 2010). This is interesting for two reasons – firstly, as they are late Roman burials, inhumation was becoming the dominant rite, and secondly, as discussed above, there is a link between bears and cremations in both the late Iron Age and the early Anglo-Saxon period, in the same region of England that the bear figurines have been found (cf. Fig. 3). A key difference is that the bear figurines were clearly not pyre goods, while the Iron Age and Anglo-Saxon bear bones are burned.

Small copper-alloy bear figurines are also rare finds from the Roman period in Britain, Switzerland and Germany. The best-known example from near Berne shows a seated figure interpreted as the goddess Artio holding a bowl of fruit and facing a bear with a raised paw (Schmölcke et al. 2017). An isolated figurine from Lorch shows a bear with a raised right paw, which could also have formed part of an Artio group, but at present the interpretation is uncertain (Bollacher 2015). In Cologne, a figurine of a bear sitting on its hind legs was found in a grave in Luxemburger Strasse in the early 1900s (Ritter 1994), and a bear figurine with a human figure in its mouth was found by a metal detectorist at Longstanton in Cambridgeshire, England (Fig. 6; Evans/Mackay 2004). The human figure has been interpreted as a child (although it could also represent a doll), and it was tentatively suggested to be a "funerary beast" (Evans/Mackay 2004). The base of the figurine is unfinished and, like the Lorch item, it may have originally been attached to furniture or another object. Although there is an association between a human and a bear in both the Artio and Longstanton figures, the specific pose of the British example is very unusual. The positioning of a human figure in the mouth of a seated carnivore is also seen in the "wolf-god" figure from Woodeaton in Oxfordshire (Durham 2014), but in this case only the legs and feet of the figure protrude from the animal's mouth. Durham (2014, 209) states that such androphagous figurines are most often found in Gaul, and "apart from wolves or dogs can be lions, Cerberus, sphinxes, griffins or wild boars". The purpose of such juxtapositions is not known, but could be as different as the human being devoured or protected by the larger figure.

Viking Age hogbacks are the only items to link bears and graves in the later early medieval period in Britain. They are large carved recumbent stones, usually 1.5 m long and mainly found in northern England and southern Scotland (Williams 2016). They are thought to have been grave covers or markers, but none have been found *in situ* to confirm this (Williams 2016). There are a great variety of types (Cramp 1991), including those with "end-beasts" that are apparently grasping the main body of the stone. Some of these end-beasts appear to be bears, and three excellent examples are found in Brompton in Yorkshire, one of which is shown in Figure 7. The presence of bears on the hogbacks does not necessarily indicate that bears were present in the region, rather they are likely to have had some protective purpose, with Williams (2016, 505) suggesting that the dead were "protected by the static gazes and enwrapping bodies of attendant ursine or dragonesque beasts". The positioning of the bears is also intriguing, as some appear to be hugging or holding on to the stone, in a manner that is very reminiscent of a bear cub suckling its mother. This could evoke ideas of protection, or perhaps of fertility. An additional feature of these hogbacks is that many of the bears appear to be muzzled, and this contrasts with the bears from the Roman period which are often shown in their wild form, unencumbered by harnesses (e.g. Fig. 5). Such a change in iconography may indicate a change in attitudes to bears, from creatures of the wild to those that were harnessed for human purposes, as is increasingly seen in the medieval and later periods (see below). A relationship between bears and the dead is widely seen in Scandinavian practices (Grimm 2013; Lindholm/Ljungvist 2016; Kirkinen 2017), and in the cremation cemeteries of eastern England (see above for discussion). Therefore, it is tempting to speculate that the placement of a carved bear with teeth and paws around the burial stone of a high-status dead person or family may (amongst other things) have been rendering in stone a practice that occurred "in the flesh" in places where bear skins were more readily available.

Roman period

In the Roman period, there is clear evidence of exploitation of bears for entertainment on the continent, but relatively little information for Britain. Both historical records and mosaics attest to bears and other large carnivores in the Roman arenas in Europe and North Africa (Toynbee 1973; MacKinnon 2006). These "entertainments" included the *Damnatio ad bestias* (death by beasts), when people were executed in the arena by large predators, and also bears fighting against specially trained gladiators or large animals such as bulls or lions (Auguet 1972). Intriguingly, there is one mosaic from Rades in Tunisia that gives the names of the bears (Coleman 2012), which might suggest that they had some longevity, at least in this arena.

Evidence for bears, or indeed any exotic animals, being used in entertainment in Roman Britain is limited. The only direct evidence comes from the amphitheatre in London, and although the bear bone was missing when the final publication was completed (Bateman et al. 2008), Dr Jane Sidell has confirmed that she identified it as a bear humerus, with a knifemark (possibly from skinning) and stated it was found at the edge of the arena (J. Sidell, pers. comm. Jan. 11, 2022). To my knowledge, this is the only evidence of an exotic animal from a Roman arena in Britain. At least five other Roman sites from the 3rd–4th centuries AD also have bear limb bones (e.g. femora, tibiae), which have been interpreted as indicating the presence of complete (and therefore live) animals (see O'Regan 2018, appendix 2, for full details). These sites are Courage Brewery and Tabard Square in London (Reilly 2008), Binchester (Jessop 2012), Fullerton Roman Villa (Hammon 2010), and Catterick Bridge (Meddens 1990). Live bears may also have been represented at Balkerne Lane and Butt Road in Colchester, but body part data is not given in the publication (Luff 1993). An obvious interpretation for the presence of these live animals in human settlements is entertainment, which might be supported by the "Colchester Vase" found with a human cremation, pottery jug, and a Samian dish at West Lodge, Colchester (Thompson Watkin 1877). This vase, dating to the late 2nd century AD, shows a bear in gladiatorial combat with a man wielding a whip (Fig. 8). Unlike imported Samian bowls that depict bears, this vase was made in the Colchester area (Toynbee 1963), and may therefore represent a scene that the potters and customers were familiar with. It was also inscribed after manufacture with the names of the gladiators, but the bear is not named (Thompson Watkin 1877).

Medieval and early modern periods

The early medieval (incl. Anglo-Saxon and Viking) records of bears in Britain are discussed above and appear to relate to skins and a probable trade in bear products rather than live animals. However, there is a distinct change in the record of bears from the start of the medieval period (AD 1066–1485). Out of ten sites with bear remains from medieval England (O'Regan 2018, appendix 2) three have yielded body parts of bears that are not likely to have been kept as souvenirs; a humerus from Barnard Castle (Austin 2007) and another from Gaol Street, Hereford (Hamilton Dyer 2007), and a scapula from Seal House, London (Museum of London Archaeology [MOLA], database). This again suggests live bears were present, which is supported by iconographic and documentary evidence, such as the Bayeux Tapestry (as noted by Oehrl, this volume), which shows a bear tethered to a tree and a man with a sword looking as if he is about to strike it. FitzStephen in 1174 said that in London "in the winter holidays […] bears of a large bulk are baited with dogs" (Pegge 1772). This statement clearly describes bear-baiting, a very popular entertainment of the time, where dogs were set on tethered bears, and it is likely that there was betting on the outcomes. Further medieval evidence comes from John of Gaunt's Record Book, where he is recorded as arranging for payments for baiting in Newcastle-under-Lyme in Staffordshire, in 1372 (The National Archives: DL 42/13, cited in Somerset 2017). Relatively little is known about medieval baiting, other than occasional mentions

in manuscripts and illustrations or carvings. The latter examples include a famous image from the Luttrell Psalter (AD 1325–1340). The bear is shown with a chain and muzzle, but also rather oddly with a stripey wrap or blanket around its hindlegs (Luttrell Psalter, bear baiting image f.161r.). This is unquestionably an image of baiting, as the dogs are being set on the bear, while the audience and the bearward (i.e. bear keeper) look on. A much less well-known medieval image of baiting was brought to my attention by Dr Mark Hall. This undated misericord (a ledge for perching on during church services) in the Burrell Collection in Glasgow, Scotland, shows a muzzled bear fighting a dog (Fig. 9). Stowell Phillips (2008, 159) found that in a sample of 696 misericords showing terrestrial animals, only 2 % depicted bears (n = 14), 9 % showed monkeys, and 18 % showed lions. This study also found a muzzled bear on the misericords at Durham Castle, and a bear included in a stained glass window in York Minster. The presence of bear iconography in churches is particularly intriguing, as Pastoureau (2011) suggested that the Christian church deliberately tried to suppress the role of bears as they had formed part of earlier, pagan religions. Whether or not this is the case, it is clear that bears are rarely present in medieval iconography and material culture (although they are included in heraldry, such as the famous "bear and ragged staff" emblem of the Earl of Leicester [Fig. 10]). However, archival and archaeological evidence demonstrates that live bears were present in medieval towns and cities.

It was not until the early modern period that bear-baiting reached its peak, with the building of specialised arenas, mainly in London at Bankside (Bowsher 2012), but also in rural areas, such as Little Budworth, Cheshire (Hindle 1995). The post of "Master, Guyder and Ruler of all our Bears" was established by Richard III in 1484 and continued as a royal appointment (with various name changes) until at least the 1620s (Cerasano 1991). By the late Tudor period this was a highly sought-after post, with courtiers and entrepreneurs vying for it. Evidence for this comes from the archives at Dulwich College, London, which contains several letters from the theatre impresario Philip Henslowe, attempting to use his influence to gain the job when the previous incumbent was sick (Greg 1907; Cerasano 1991). The Master of the Bears licenced bearwards in England after the Vagabond Act of Elizabeth I in 1572. This Act meant that like players (i.e. actors), bearwards now had to have a patron, such as a member of the aristocracy, or else they could be prosecuted for vagrancy. Several lords had both playing troupes and bearwards, for example in 1565/66 Lord Strange's players were performing in Lincoln and Cambridge, while Lord Strange's bearward was in Newcastle (Records of Early English Drama: REED 2020a–c). Such widespread patronage, and the determination people showed to gain the role of "Master" suggests that there was prestige, money, or both, involved in bear-baiting in England at this time. Multiple monarchs enjoyed baiting, and were able to command a performance by the Masters of the Bears at whichever palace or castle they happened to be occupying. King James I (reigned 1603–1625) went so far as to remodel the Lion Tower at the Tower of London to allow a better view of the animals being baited below (O'Regan et al. 2006).

There is also evidence for polar bears (*Ursus maritimus*) in London in both the medieval and early modern periods. For example, in 1251 a polar bear was gifted to the English monarch by the King of Norway (Grigson 2016), and in 1609 two polar bear cubs were captured on Cherry Island (reported as south of Greenland, but "Greenland" probably means Svalbard in this case, cf. Grigson 2016) and presented to James I (Ravelhofer 2002). The two cubs were sent to Bankside to be kept by the Master of the Bears (Ravelhofer 2002). There is a possibility that one of these polar bears could be the same "white bear" that was baited during the visit of the Spanish Ambassador in 1623, as John Chamberlain reported that they "then turned a white beare into the Thames where the dogs baited him swimming, which was the best sport of all" (Chamberlain Letters, cited in Ravelhofer 2002). While baiting was most formalised in London, bears and baitings were to be seen all over England, with some towns becoming particularly well known for their bear-related activities. Congleton, in Cheshire, for example, is remembered in a rhyme "Congleton rare, Congleton rare, sold the Bible to

pay for the bear" which alleges that the town spent the money intended for a new bible on a bear as theirs had died just before a major public event (Baldwin 1995). An archival record from 1613/14, again from Congleton, shows that overnight couriers were sent out to find a bear for the "Wakes" (town carnivals or holidays) after the intended animal failed to show up (Baldwin 1995, 264). Bearwards may have travelled with single animals or groups, as records in both Cheshire and Somerset refer to multiple "beares" (Baldwin 1995; Stokes 1996). In fact documents relating to a great fire in the town of Nantwich, Cheshire, in 1583, report that "John Seckerson who having in his stable iiijor [four] great beyres of his dyd lose theyme out in the beginning to the stretes wheroff the women were soe affrayed. They durst not carrye water". That they were "great" bears rather than cubs indicates that he owned at least four adult animals, and Baldwin (1998, 99) suggests that he was involved in bear-baiting.

By the mid-18th century many public activities such as bear dancing and bear baiting were popular enough to be made into stoneware ornaments and jugs at potteries in Nottinghamshire and Staffordshire (Beddoe 2015, 214–215; Halfpenny/Beddoe 1990; cf. Fig. 11). These items were sold to the growing middle classes, and were taking off in popularity (*c.* 1750s) as bear baiting is thought to have been in decline (however, I know of no study of abolition that has actually attempted to chart this). Parliamentary activity attempted to get baiting banned for a number of years in the early 1800s, finally being successful in the Cruelty to Animals Act of 1835 (Tünaydin 2013). Despite this, it appears the British introduced bear-baiting into parts of the British Empire, particularly Pakistan, as a method of disrupting local hierarchies (Fakhar-i-Abbas 2015; Kavesh 2018; 2019).

In addition to baiting, bear-dancing was also popular. These animals must have been imported to Britain, but who travelled with them is currently unknown. Tünaydin (2013) provides a fascinating insight into bear dancing, demonstrating that bear training and performing was associated with gypsies throughout Europe in the late medieval through to modern periods. A second source of dancing bear trainers (*orsanti*) was northern Italy, as detailed by Serra (2013). The *orsanti* would leave Italy with their performing animals (which could also include other taxa such as horses, camels, monkeys or dogs) and travel across Europe during the summer months, often returning to Italy for the winter (Serra 2013). Bears were taught multiple tricks such as pushing prams and saluting, as well as dancing, sometimes in pairs (Tünaydin 2013). One intriguing early modern record of bear dancing in England comes from 1528/29 when 20 pence was paid to the servant of the Duke of Suffolk with "the dancing bear and the dancing wife" (Stokes 1996). Sadly it is not clear from the record whether they danced together or separately. A children's book from the late 19th century gives an overview of the life of a bear from its birth in the mountains, through a career as a dancing bear, to its eventual exhibition and death at the Zoo in the Jardin des Plantes in Paris (Anon. 1901). While clearly fiction, the text and illustrations give some impression of the life of the animal, and the sort of tricks dancing bears might have performed (Fig. 12).

Bear dancing continued in England into the early 20th century, with specialist bear-leaders travelling over from Italy during the summer months (Serra 2013), finally being outlawed in 1911 (Tünaydin 2013). Bears were also very popular in menageries and later in Zoological Gardens, which exhibited multiple species including brown, black and polar bears (O'Regan 2020). The presence of bears in zoos and in the streets may have helped lead to the widespread take-up of bears as children's toys (Fig. 13), with teddy bears remaining very popular to this day.

Conclusions

Brown bears have had a varied history in England, from native mammal to source of entertainment. This paper has focussed on the presence of bears and bear iconography in archaeological sites from

the Bronze Age onwards, and for many periods bears are strongly associated with burials, and particularly cremations. In the Bronze Age and Iron Age these were wealthy graves with multiple traded items within them. However, given that they are so rare, it does not appear that bears had a role to play in the mortuary rituals, rather it was the status associated with an "exotic" skin or the ability to trade widely that was important. In contrast, bears do appear to have had a role in the early medieval (Anglo-Saxon) cremation funerary rite in a defined portion of eastern England (Yorkshire to Norfolk). Bear bones are not common in these cremations, but they are found in four different cemeteries in the 5th–7th centuries AD. The source of the bear phalanges or skins used in these early medieval cremations is unknown. There are some parallels between the English practices and earlier Germanic rites on the continent as discussed by Squires (2016).

In the Roman period bear figurines made of jet may have been used as protective amulets in infant graves and cremations, but there are no records of bear bones from Roman burials. However, there are bear bones from a number of Roman settlements, which suggests that the animals themselves were being used for entertainment, such as combat and dancing. Evidence for this includes a bear and a gladiator in combat together depicted on the "Colchester Vase", and a bear humerus found in the Roman amphitheatre in London. In the medieval period we find the first direct archival records of bear baiting, dating back to at least 1174. Baiting became formalised through the laws of Queen Elizabeth I, which required bearwards to have licenses for baiting and dancing. While baiting was outlawed in 1835, bear dancing continued into the early 20th century. Pottery figurines of bears were sold from the 1750s onwards, and live animals continued to be exhibited in zoos and menageries, but by the mid-20th century the majority of the British population would only interact with bears in the form of stuffed toys. Overall then, live bears do not seem to have occupied a significant cultural role in Britain until the rise of bear-baiting in the medieval period, although they had a role in early medieval cremations practices, and are seen in a few earlier burial situations. This is considerably different to many of Britain's closest European neighbours (see different contributions, this volume), and suggests that bears were very rare or absent in the wild in the time periods considered in this paper.

Acknowledgements

I would like to thank Oliver Grimm for inviting me to participate in the "Bear and Human" conference that gave rise to this chapter. I would also like to thank the many colleagues and museum curators who have helped me by providing access to collections and helped me gain permission for images. These include Heather Perry (Wiltshire Council), Martha Jasko-Lawrence (Museums Sheffield), Kirsty Squires (Staffordshire University), Miranda Goodby (Potteries Museum and Art Gallery, Stoke-on-Trent), Christopher Evans and Alex Bovaird (Cambridge Archaeological Unit), Derek Craig (Anglo-Saxon Corpus/Durham University), Mark Hall, Clara Morgan (Museums Sheffield), Glasgow Museums, The Trustees of the British Museum, and The Metropolitan Museum, New York. Thank you also to the referees whose helpful comments have improved the text, and Gundula Lidke for excellent copy-editing.

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Fig. 1. A post-conservation photograph of the Early Bronze Age brown bear pelt from Whitehorse Hill, Dartmoor. The grave contained the cremation of a young adult, with a number of high status artefacts, and is radiocarbon dated to 1740–1560 cal. BC. The bear pelt had been folded in half to wrap the cremation, and the two layers can clearly be seen here with packing between. Note there is no skin present, only the hair was preserved within the peat (photo courtesy of the Conservation and Museums Advisory Service, Wiltshire Council).



Fig. 2. Reconstruction of a high status Iron Age human cremation grave from the Panshanger Estate, Welwyn Garden City, England, reported in Stead *1967, and on display in the British Museum. The amphorae and a silver cup were imported from Italy, and other items are from Gaul. Part of a unique set of glass gaming pieces can be seen above the human bones in Fig. 2b. Six bear terminal phalanges were found intermingled with the cremated human remains (bear remains not shown here). The grave has been dated between 25–15 BC (after* Sealy *2009, © The British Museum).*

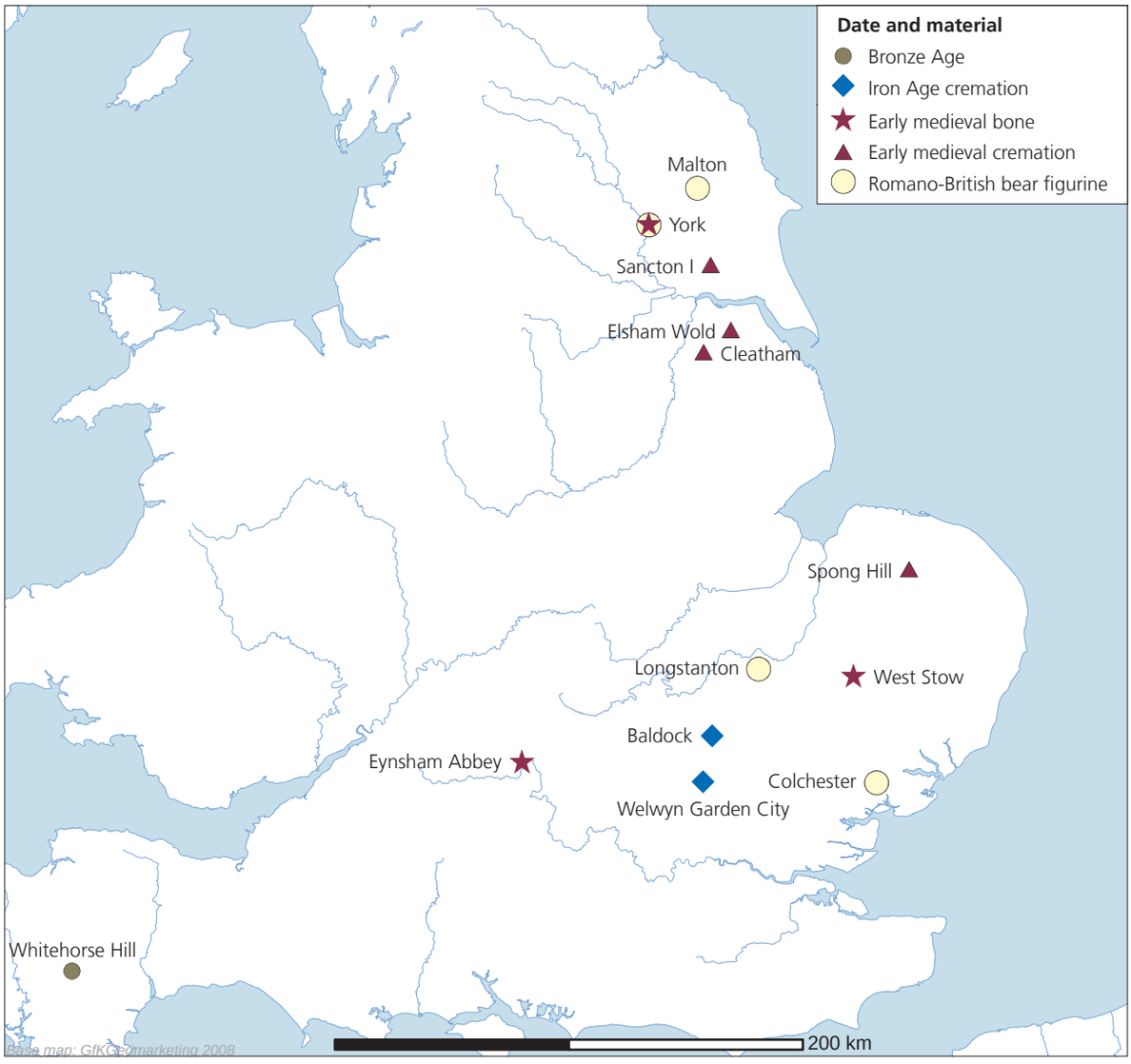


Fig. 3. Map of Britain showing the southerly and easterly distribution of Bronze Age, Iron Age, and early medieval cremations with bear remains, sites with Romano-British bear figurines, and sites with early medieval bear bones. See text for details and references (map GIS department, ZBSA).



Fig. 4. Cremated intermediate bear phalanges from burial MT89BLG (urn 983) from the Anglo-Saxon cremation cemetery at Cleatham, Lincolnshire. It was not possible to sex the human remains, but they were from an older mature adult (31–40 years). There were no pyre goods associated with this individual (after Squires *2011, appendix 2; photo courtesy of Dr K. Squires).*



Fig. 5. Romano-British jet bear figurine from Bootham, York. It was found in AD 1845 with a jet bead, a coin of Constantine I (AD 312–315) and a Castor ware beaker, and it is thought to have formed part of a burial group, but no bones were identified or noted at the time (Crummy 2010, 43). Note the incised marks on the shoulder and rump of the bear which Parker (2018) suggested could represent stars. The figurine is in the Bateman collection, Weston Park Museum, Sheffield (© Museums Sheffield).



Fig. 6. Romano-British copper alloy bear figurine found by a metal-detectorist at Longstanton in Cambridgeshire. Note the human figure held within the mouth of the bear (after Evans/Mackay 2004).



Fig. 7. Hogback number 17a, from the village of Brompton, Yorkshire. The end-beasts are clearly muzzled, and possibly shown in a suckling position (photo T. Middlemass, image reproduced by permission and copyright of the Corpus of Anglo-Saxon Stone Sculpture).



Fig. 8. The "Colchester Vase", a locally made cup showing two gladiatorial scenes (one of which shows combat between a human with a whip and a bear), and a hunt scene of dogs chasing hares. It was found at West Lodge, Colchester, in 1853 with a human cremation, a small pottery jug or ewer and a Samian dish (cf. Thompson Watkin 1877; © Ancient Art and Architecture Collection Ltd. / Bridgeman Images).



Fig. 9. Bear baiting scene on an undated medieval misericord from the Burrell Collection, Glasgow (cat. no. 50/2044, photo M. A. Hall, Perth, Scotland; image reproduced courtesy of Glasgow Museums).



Fig. 10. The bear and ragged staff was the emblem for the Earl of Leicester's family in the medieval and early modern periods, and is now the badge of the County of Warwickshire. This medieval lead alloy livery badge in the collections of the British Museum (item no. 1853,0502.8) would have been sewn onto the clothing of a servant. The staff has been lost, but the bear is still very clear, as is its muzzle – a very common feature of medieval and early modern bear images (© The Trustees of the British Museum).



Fig. 11. In the mid-18th century lidded jugs or mugs in brown or white-glazed stoneware depicting bear-baiting were made in Nottinghamshire and Staffordshire. The lid of the mug is formed by the head of the bear and can be removed. This is a typical example, showing a collared, chained, and muzzled bear holding a dog between its fore-paws. It is also clearly meant to represent a male bear (© The Metropolitan Museum of Art, New York, Gift of Carleton Macy, 1934. Accession number: 34.165.4a,b; public domain).

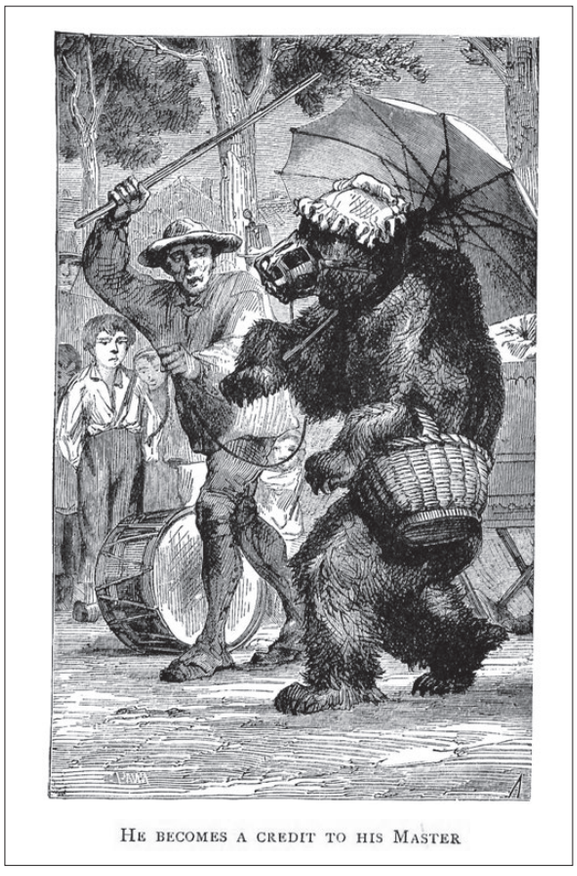


Fig. 12. Engraving of Martin the dancing bear from the late 19th century children's book "The life of a bear" (Anon. 1901). The illustrator has also shown the key accoutrements of a travelling bearward – pole, muzzle, and drum (see Serra 2013 for more details). Also note the caption – the book has a strong moral undertone to instruct the young readers in obeying their elders.



Fig. 13. Bears as childrens' toys became increasingly popular in the 20th century. This example, made in Germany between 1910–1920, shows a dancing bear with muzzle. While grotesque to modern eyes, this toy represents a common sight in towns and villages in the 1800–1900s, as bears travelled with their owners to dance for money (Social History collection, Weston Park Museum, Sheffield, accession no. 1989.522; © Museums Sheffield).

*Table 1. Names and dates of British archaeological time periods referred to in the text. Dating based on Hunter/Ralston 2009, except *Lateglacial which is in years BP (before present) and based on Rasmussen et al. 2014.*

Period	Dates
Lateglacial*	14,692–11,400 BP
Mesolithic	9600–4000 BC
Neolithic	4000–2400 BC
Bronze Age	2400–800 BC
Iron Age	800 BC – AD 43
Roman	AD 43–410
Early medieval (includes Anglo-Saxon and Viking)	AD 410–1066
Medieval	AD 1066–1485
Post medieval (includes early modern and Victorian)	AD 1485–present

Bears and humans in Sweden – 10,000 years of interactions from the Mesolithic to the Middle Ages

By Ola Magnell

Keywords: Brown bears, zooarchaeology, Sweden, body part frequency, butchering

Abstract: The interactions between humans and bears from the Mesolithic to the Middle Ages in Sweden have been studied through the zooarchaeological record. The abundance of bear remains at settlement sites through time has been quantified, and a decrease in the frequency of bears from the Early Mesolithic to the Early Neolithic has been noticed. The anatomical representation of bears in the records indicates hunting nearby settlements and the transport of most types of body parts during the Mesolithic. After an increase in bear remains in the Middle Neolithic, associated with the Pitted Ware culture, a decreasing trend could be discerned for southern Sweden from the Bronze Age until the Early Iron Age, while the situation is the opposite for the northern areas. From the Late Iron Age to the Middle Ages, a slight increase in bear remains can be noticed, reflecting a development of trading networks and the circulation of bear furs from the north to the southern regions of Sweden. This is confirmed by the body part representation, which consists mainly of claws from Iron Age and medieval sites in southern Sweden. Finds of bear bones in ritual contexts indicate a symbolic significance of the bear to humans. In northern Sweden, a long tradition of ritual handling of bear bones can be traced from at least the Late Neolithic up until recent times. Finds of tooth pendants made of bear canines from the Mesolithic until the 11th century AD indicate a long use of bear fangs as amulets in Sweden.

Introduction

Bears have, through time and in different geographical regions, played various and changing roles in relation to humans, in regard to subsistence as well as the symbolic and religious aspects of different societies. The hunting of bears has varied in its importance to different groups of humans through time, and, besides being a part of their subsistence and a way to obtain food and furs, it has served to protect livestock, as well as providing wild game management and recreation. Bear hunting has, in many societies, been of large social relevance and even religious importance (Björklöf 2010; cf. different contributions in the present volume). In most cases, the purpose of bear hunting has been a combination of several of these factors. At the same time humans have, through hunting and the alteration of environments and the landscape, had a large impact on bear populations, which even resulted in the extinction of the brown bear in several regions (Servheen 1990, 3).

Through the zooarchaeological record, the interactions between humans and brown bears (*Ursus arctos*) in Sweden from the last Ice Age until the end of the Middle Ages have been studied for this paper. The aim has been to show the frequency of osteological bear remains in the faunal record from

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 209–234 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134335

archaeological sites in different parts and time periods of Sweden, as an estimate of the importance of bear hunting over time. What was the significance of bear hunting for the subsistence during different periods? Is it possible to trace the impact of hunting on the bear populations?

The utilisation of bears has also been studied by the analysis of body part frequency in the faunal record from archaeological sites and butchery marks on bear bones. If bears were hunted near to settlements, most parts of their bodies can be expected to be found in the settlement, while, if hunting took place far from the settlements, only the most important body parts of the bears might be expected to have been transported back to the community (Binford 1978, 10–11; Lyman 1994, 223–234). Higher frequencies of bones from body areas with relatively more meat, such as the trunk and proximal limbs, indicate that bear meat was important to humans. Bones from distal parts of the limbs can be taken as an indication that the bear skins, with the bones of the paws still attached to the skins, were the main reason for hunting bears. Body part frequencies of bear bones from different periods have been analysed to trace chronological developments in the utilisation of the bears. Analyses of butchering marks have also been used to trace how different body parts of the bears were utilised.

Additionally, finds of osteological bear remains in ritual contexts, and depositions of bones that suggest how they were handled, have been used as an indication of the symbolic and religious significance of bears to humans in Sweden through time. Sami bear burials in the northern part of the country will not be dealt with here, since, in Sweden, they are mainly dated to periods after the Middle Ages (*c.* AD 1500), and have been thoroughly discussed earlier (and also in this volume; Zachrisson/Iregren 1974; cf. Iregren, this volume). Similarly, finds of bear bones, mainly claws (phalanx 3), in Iron Age burials will not be included in this study, since this topic has been covered in several earlier papers, as well as in this publication (Petré 1980; Iregren 1988; Lindholm/Ljungkvist 2016; cf. different contributions in the present volume). Finds of teeth and bones from bears in burials pre-dating the Iron Age in Sweden are very rare and will be used as an example of the ritual handling of osteological bear remains.

Material and methods

The abundance of brown bears through time has been quantified by the number of settlements with faunal assemblages including bear bones from different archaeological periods. To evaluate the frequencies of the brown bear, the occurrence of wolf, lynx, and red fox has also been analysed for comparisons with, and with reference to, the hunting of other species of the Order Carnivoria. Only sites with a NISP (number of identified specimens) over 100 have been included in the study, since it can be assumed that the chance of finding bear bones in smaller samples is very low, based on the relative rareness of the species. Ideally, only sites with larger samples should be included in the study, but this would result in only a few sites from large excavations that in many cases are special sites, such as central places or urban centres.

The study is based on 406 faunal assemblages and a database of zooarchaeological analyses in Sweden kept at Arkeologerna, Statens Historiska Museer. The database is based on published and unpublished zooarchaeological analyses that were compiled by the author to include as many sites as possible, but it is not the ultimate and complete database of all zooarchaeological analyses from Sweden. Due to the generally low number of bear bones in faunal remains from archaeological sites in relation to those of other animals, such as ungulates and domestic animals, the frequency of osteological bear remains in relation to other mammals has only been used for the quantification of the abundance of brown bears at Mesolithic sites with their generally large presence of bear bones.

The chronology in the long-term analysis of the frequency of bears follows the standard for (southern) Sweden. Due to the long duration of the Mesolithic, it has been divided into three parts:

Early Mesolithic (9500–6400 BC), Middle Mesolithic (6400–5400 BC), and Late Mesolithic (5400–3900 BC). The Neolithic has been divided into two parts: Early Neolithic (3900–3300 BC) and Middle Neolithic (3300–2300 BC). Due to the relatively few sites from the Late Neolithic and the Bronze Age (2300–500 BC), there is no division of these periods, but most sites date to the Late Bronze Age. The Iron Age has been divided into the Early Iron Age (500 BC–AD 400) and the Late Iron Age (AD 400–1050). The final period is the Middle Ages (AD 1050–1500). In a comparison of the frequency of bear bones at settlement sites between the northern and southern parts of Sweden, a slightly different division of the chronology into longer periods has been used, due to a generally lower chronological resolution of the northern sites.

Due to a combination of factors, namely ecology, cultural history, and bone preservation, the occurrence of bears has been studied and presented separately concerning the southern (the regions Göta- and Svealand) and northern parts (Norrland, including the county Dalarna) of Sweden. Due to different aspects concerning soil conditions, such as the predominance of podsol soils with their low pH-values, the preservation conditions for bones are poorer at most sites in the northern parts of Sweden, and the faunal remains mainly consist of burned bones in this region (Ekman/Iregren 1984, 13). Given the difficulty in identifying burned bones in comparison with well-preserved unburned bones, the faunal remains of archaeological sites from the southern regions make direct comparisons problematic. This division of Sweden into two regions is also relevant from an ecological and climatic perspective (with a temperate climate with broadleaf forests and larger agricultural areas in the southern parts, and a subarctic one with boreal forests in the northern parts).

Several sites from the northern parts of Sweden have been occupied repeatedly through time and thus have no clear stratigraphy. This means that many settlements have been dated to within long time periods, such as from the Late Neolithic to the Early Iron Age (Ekman/Iregren 1984, 7–13).

Due to the generally low number of bear bones at single sites, the body part frequency has been analysed through the compilation of several sites from different archaeological periods. The quantification has been based on the number of identified bone specimens (NISP) and the division into five main body regions; head (cranium and mandible), loose teeth, trunk (vertebrae and ribs), long bones (scapula, humerus, radius, ulna, pelvis, femur, patella, tibia, fibula), and paws (carpals, tarsals, metacarpals, metatarsals, phalanges). The anatomical distribution of single bone elements has also been compiled and is presented in the bear skeleton figures (see below).

By the analysis of types of butchering marks and their anatomical position on the bones, it is often possible to describe stages of the butchering process, such as skinning, dismembering, filleting of meat or marrow fracturing (Binford 1981, 106–135).

Prelude – Finds of polar bear remains from Sweden

Finds of polar bear bones (*Ursus maritimus*) show the presence of this species during the end of the last Ice Age in the southwestern parts of Sweden. The radiocarbon dating of bones from polar bears can be correlated with deglaciation and the retreating ice sheet, with the oldest ones dating from 12,500 BC from Scania and the most southern parts of Sweden to 9800 BC from Bohuslän on the west coast (Berglund et al. 1992). All these polar bear bones come from geological finds, such as deposits of clay or peat, and not from any archaeological sites. However, the chronology of the dated bones and the earliest archaeological finds from the Late Glacial indicate possible interactions between humans and polar bears in Sweden. Finds of lithics belonging to the Late Hamburgian culture (12,800–12,000 BC) in Scania and Denmark are approximately contemporaneous with the oldest polar bear find, a femur from Kullen in northwestern Scania (Holm 1993, 15–18; Larsson 1994, 165–168). Sites from the maritime-adapted Hensbacka culture from the west coast in Sweden, with

flint material dated by shore-line replacement to about 11,000–10,000 BC, show an overlap with the dating of polar bears in this region (Nordqvist 1997, 34–35). There is no evidence for the hunting of polar bears in the Late Palaeolithic in Sweden, but encounters between polar bears and the first humans in Sweden can be expected to have occurred.

The first brown bears in Sweden

The earliest evidence of brown bears in Sweden comes from the Early Mesolithic settlement of Almeö in Västergötland by Lake Hornborgasjön, which dates to about 8700 BC (Kindgren 1995). The earliest radiocarbon dating of osteological brown bear remains from Sweden is from a geological find of a complete skeleton discovered in Ugglarp, Scania, dating to 8600 BC (Iregren et al. 1990, 13).

A mandible of a brown bear from Faurbo Knold on Zealand, Denmark, has been dated to the Allerød interstadial, about 11,400 BC (Aaris-Sørensen 2019, 19). Considering the presence of a land-bridge between Denmark and Sweden during the Allerød, it is likely that the brown bear might at this period already have spread to the southern parts of the country. During the Younger Dryas (10,600–9700 BC), when the climate was colder than during the Allerød, the return to glacial conditions likely resulted in the depletion of brown bears in the region (Aaris-Sørensen 2009, 19). At the onset of the Postglacial, the increasing temperatures and the establishment of vegetation during the Preboreal probably resulted in a fast spread of brown bears from the continent to the southern parts of Sweden. The brown bear is a highly adaptive animal, found in various environments; it is an omnivore with a broad diet based on the meat of scavenged cadavers, by preying on ungulates mainly in spring, along with various plants such as grasses and herbs, as well as ants in summer and berries in autumn (Sahlén et al. 2006, 6–7). Pollen and macrofossils of crowberries (*Empetrum nigrum*) and blueberries (*Vaccinium myrtillus*) from the Preboreal show that suitable habitats and food to sustain a brown bear population were already established by the onset of the Holocene at 9700 BC in Sweden (Björck et al. 1997, 459; Parducci et al. 2019, 7).

The distribution and frequency of the brown bear at settlement sites from the Mesolithic until the Middle Ages

The Mesolithic

The Mesolithic finds of brown bear remains are clearly concentrated in Scania, on the west coast, and in Östergötland (Fig. 1; Table 1). This reflects the history of Stone Age archaeology and several larger excavations of Mesolithic sites in these regions, where soil conditions generally are also favourable for the preservation of bones. During the Mesolithic, due to isostatic and sea level change processes large parts of the coastal region of present-day northern and eastern middle Sweden were covered by the Baltic Sea or formed an archipelago, which also explains why no bear bones from this period have been recovered in certain parts of Sweden.

The absence of brown bears from the northern parts of Sweden is probably also a reflection of the small number of sites from this period with large bone assemblages that are securely dated to the Mesolithic. Finds of brown bear are known from Inari and Kemijärvi in the northern parts of Finland, dating to 6000–5800 BC (Ukkonen/Mannerma 2017; cf. Mannerma et al., this volume). This shows a bear presence in the northern parts of Fennoscandia during the Mesolithic and most likely also in northern Sweden.

Bear bones occur at 75 % of the Mesolithic sites in the southern parts of Sweden, indicating that the bear was regularly hunted during this period. Even though osteological remains of bear occur

at most settlements, bear bones, as well as those of other larger predators, are of low frequency at all Mesolithic sites in comparison with bones from ungulates, such as red deer, roe deer, and wild boar. The frequency of bear in the mammalian faunal remains varies between 0.1–3.6 % at the settlements. The largest number of osteological bear bone remains from a settlement is represented by the 64 bone fragments from the site of Ageröd I:HC, while the highest frequency is documented for the site of Tågerup II (Fig. 2). The site of Kanaljorden in Motala, where 214 bear bones make up 12.6 % NISP of the osteological remains, is an exception, but this is a ritual site and not actually a settlement. This site will be discussed further below in the section that deals with ritual depositions and the handling of bear bones.

In a ranking of the most hunted mammalian prey, based on the frequency of NISP from Mesolithic settlements, the median values indicate that the bear was the ninth most hunted animal, but the values range from the third to the thirteenth most hunted animal. In comparison with other predators, the bear seems to have been hunted regularly, and 24–65 % these bones are from brown bears.

A decrease in the occurrence of brown bears can be noticed from the Early Mesolithic to the Middle and Late Mesolithic sites. On the contrary, the occurrence of other larger predators, such as wolf and red fox, increases at Middle and Late Mesolithic sites in comparison with Early Mesolithic sites (Fig. 3). Due to the low sample size, the validity of the result is a bit uncertain, but the frequency of the brown bear, based on NISP in relation to other mammals, also indicates a generally higher occurrence of bear bones at Early Mesolithic in comparison with Late Mesolithic settlements (cf. Fig. 2).

The depletion of other large game, such as elk (*Alces alces*) and aurochs (*Bos primigenius*) has been noticed over time at Mesolithic sites in south Scandinavia, and there is a lower frequency of these taxa on coastal sites in comparison with inland sites. This is suggested to have been a result of a change in habitat and vegetation, but also due to an increasing hunting pressure over time in the coastal regions (Magnell 2017, 127–129). On the Danish islands, the brown bear, among other larger mammals, also became extinct in this period (Aaris-Sørensen 1980, 131–138). The indication of a lower occurrence of bear bones in settlements during the Mesolithic is possibly a reflection of a decreasing bear population. Changes in vegetation during the Atlantic chronozone (7000–3800 BC) and the spread of broadleaf forests with a denser canopy together with less understory on the forest floor resulted in poorer habitats for light-demanding plants with berries, such as blueberries (*Vaccinium myrtillus*) and raspberries (*Rubus idaeus*; cf. Noe-Nygaard 1995, 246–248; Ricard/Messier 1996, 153–159; Miina et al. 2009, 588). This change of biotopes may have resulted in less suitable habitats for brown bears. An increasing hunting pressure over time may have affected the bear population in more densely populated areas with sedentary coastal settlements. The bear still seems to have been regularly hunted and occurs at nearly two thirds of the settlement sites from the Late Mesolithic (Fig. 3).

The Neolithic

The frequency of bears is distinctly lower for Early Neolithic sites in comparison with the Mesolithic ones (cf. Fig. 3). Most likely this does not represent a decrease in the bear population, but rather it reflects the neolithisation and the shift in subsistence strategy from hunting-gathering to farming, with less focus on hunting. A similar decrease can be noticed for the other Carnivoria, indicating that the decrease probably reflects a general diminishing in the importance of hunting for subsistence during the Early Neolithic in the southern parts of Sweden. Bear bones have been noted at only two sites belonging to the Funnelbeaker culture in Scania in southernmost Sweden (Table 2). These finds show that the brown bear was still present and was also occasionally hunted, but not as regularly as during the Mesolithic.

The occurrence of bears is clearly higher at Middle Neolithic settlements compared to the previous Early Neolithic period, but still lower than during the Late Mesolithic. An increase can also be

noticed for wolf and lynx in this period, but not for red fox (cf. Fig. 3). This increase in bear hunting can be associated with sites of the Pitted Ware culture, which had a subsistence strategy mainly based on the hunting of seals and fishing, but also on the hunting of terrestrial game. If only sites belonging to the Pitted Ware culture are included in the quantification for the Middle Neolithic settlements, the frequency is higher and the bear occurs at 50 % of the sites, which is still a slightly lower occurrence than during the Late Mesolithic sites with 64 %. On Pitted Ware culture sites, the brown bear is the third to twelth most hunted mammalian taxon, with a median as the eighth most hunted wild game, which is similar in comparison to the Mesolithic sites.

Finds of bear bones at the Pitted Ware culture sites of Ajvide on Gotland and Tråsättra in Uppland (Hallin 2008, 5; Magnell 2019) indicate that bear body parts were brought to regions with no bear population (Fig. 5). The island of Gotland, situated in the middle of the Baltic Sea, has never had any brown bear population (Lepiksaar 1986, 59). It can also be assumed that bears did not inhabit the island where the Tråsättra settlement was situated in the outer archipelago of the Mälarhavet. During the Neolithic, due to the Littorina transgression, the region of the Mälar valley in middle eastern Sweden had a shore-line that was about 40–20 m higher than today; it was thus a part of the Baltic Sea called Mälarhavet (Björck et al. 2019, 34–40).

The frequency of bears is slightly lower on sites in the northern parts of Sweden that date to the Early and Middle Neolithic in comparison with settlements from the southern parts (Fig. 4). Whether this means that the brown bear was hunted less often in the northern parts can be questioned. One explanation might be that most of the faunal remains from the northern parts of Sweden are burnt and fragmented, thus making the identification of bear bones more difficult in comparison with mainly unburned bones from southern regions.

The Bronze Age

The sites from the Late Neolithic and the Bronze Age show a lower occurrence of bears in comparison with the Middle Neolithic, with frequencies that are comparable to the sites from the Early Neolithic; this probably reflects a decreased importance of hunting for subsistence during this period. For the other predators (red fox, wolf, lynx) a decrease could also be noticed (cf. Fig. 3). Bear bones occur on only one site out of eleven Bronze Age ones from Scania, while bear remains occur at two settlements out of six sites from the region of Uppland (Fig. 5; Table 3). The lower occurrence of bears in the region of Scania, in comparison with Uppland, can be considered as an indication of the depletion of brown bears in this southernmost region of Sweden. The reconstruction of the vegetation in Scania, based on pollen analysis, shows deforestation; there was already a largely open cultural landscape during the Bronze Age in the agricultural plains of the western and southern areas of the region (Berglund 1991; Lagerås/Fredh 2019). This change in vegetation probably resulted in less suitable habitats for bears; together with an increasing human population and a higher hunting pressure this might have resulted in a depletion of brown bears in parts of Scania by the 2nd millennium BC. Due to the low number of sites with larger samples of faunal remains from the Bronze Age, the validity of this observation is yet uncertain and larger data sets are necessary to confirm these regional developments.

Sites dating to mainly the Late Neolithic and Bronze Ages in the northern parts of Sweden show an increased frequency of bear remains in relation to the Early and Middle Neolithic. This can possibly reflect an intensification of bear hunting in this period, but it may also have other explanations. Several of the Early and Middle Neolithic sites in northern Sweden are coastal settlements with a subsistence strategy largely based on the hunting of seals and, most likely, fishing, which means that terrestrial game such as bear generally occurs less frequently at these sites (Ekman/Iregren 1984, 20–26). As most of the Late Neolithic/Bronze Age settlements were situated inland, with a large focus on terrestrial game, such as elk and beaver, as a subsistence strategy (Ekman/Iregren 1984,

31–38), this probably means that encounters with, and the hunting of, bears were more likely in these areas.

In comparison with the southern parts of Sweden, the frequency of bears is higher at the Late Neolithic/Bronze Age sites in the northern parts, which probably reflects the differences in subsistence between the two regions (Fig. 4). In the northern parts hunting, gathering, and fishing were the basis of the economy during these periods, while subsistence in the southern parts was highly focused on agriculture and animal husbandry.

The Iron Age and Middle Ages

In the southern parts of Sweden, the occurrence of bears decreases even more during the Early Iron Age; bear bones occur at only 2 % of the sites (cf. Fig. 3). The only find from this period is from the settlement of Kyrsta in Uppland, where a claw (phalanx 3) was recovered in a well that has been dated to the 1st century BC (Sjöling/Bäckström 2006).

The decreasing occurrence of brown bears is possibly the result of an increased focus on the cultivation of crops and animal husbandry as a subsistence strategy during the Early Iron Age. A decrease in sites with bones of red fox, wolf, and lynx also indicates a general decrease in hunting in this period (cf. Fig. 3). Further, changes of the environment to a more open cultural landscape, and fewer suitable habitats for brown bears in certain agricultural core-areas in the southern parts of Sweden are thought to have resulted in a depletion of brown bears in certain regions.

The occurrence of bear remains increases again for Late Iron Age settlements and even more for sites from the Middle Ages (cf. Fig. 3). This does probably not reflect an increase of bear hunting in the southern parts of Sweden, but rather an increase in trading networks and in the circulation of bear skins. This is also indicated by the body part representation, which will be presented in the next section. Finds of bear claws occur occasionally in Iron Age burials from the region of Mälardalen and Gotland, especially from the Roman Iron Age to the early Vendel Period, which further indicates that bear skins were commodities of importance that were traded during this period (Iregren 1988; Lindholm/Ljungkvist 2016; cf. various papers, this volume).

The presence of bear bones at the trading sites of Bandelunda and Burge on the island of Gotland clearly shows that the zooarchaeological finds from the Late Iron Age and the Middle Ages represent the long-distance transportation of bear parts. Finds of bear remains from the Late Iron Age and the Middle Ages mainly occur in central places and towns, such as Uppåkra, Helgö, Birka, Sigtuna, and Lund. This most likely also reflects the importance of these places in trading and inter-regional contact. Finds of bear bones at Ekholmen, a castle situated in Västergötland, which also has a relatively high occurrence of bones from other wild game, indicate the presence of the brown bear in regions with woodland in southern parts of Sweden during the Middle Ages.

Historical sources from the Middle Ages, such as the laws (*landskapslagar*), also show the presence and hunting of brown bears in different regions of Sweden. In the *Upplandslagen* (the law of Uppland), the *Västmannalagen* (the law of Västmanland), the *Hälsingelagen* (the law of Hälsingland), as well as in the later law of King Magnus Eriksson, all from the 14th century, it is stated for everybody and everywhere that bear, wolf, and fox shall be killed with impunity. Also, the *Västgötalagen* (the law of Västergötland) states that the person who kills a bear owns it. The *Östgötalagen* (the law of Östergötland) dictates that everybody shall hunt bear, since he (the bear) is a superior force. "Superior force" here means that herders were not obliged to protect livestock from bear attacks as they were supposed to do for attacks by other predators, such as wolves. This law also prescribes that peasants should regularly perform communal drive hunts of bears and wolves. Worth mentioning is that the *Skånelagen*, the medieval law from Scania, does not mention rules regarding the hunting of bears. This can be interpreted as an indication that the animal was rare in the region. However, the *Skånelagen* mentions that it is punishable to keep and raise bears or wolves (Myrdal 2012, 180, 182–183).

The number of sites with larger faunal material from Norrland dating to the Iron Age and the Middle Ages is low, making interpretations of the occurrence of bears in the northern parts during these periods uncertain (cf. Fig. 5; Tables 4–5). However, the available data suggest an increase during the Iron Age, followed by a slight decrease in the Middle Ages (cf. Fig. 3). The peak occurrence of bear remains at northern Swedish sites during the Iron Age coincides with the period when bear claws (phalanx 3), usually interpreted to represent bear skins, occur relatively frequently in Roman Iron Age and early Vendel Period burials and with decreasing frequency until the Viking Period in the region of Mälardalen and Gotland (Lindholm/Ljungkvist 2016; cf. Lindholm/Ljungkvist, this volume). Possibly, the indications for an increase in bear hunting in the northern parts of Sweden reflect a high demand for bear skins to be exported to the southern parts during the Iron Age.

Utilisation of the brown bear: Body parts and butchering marks from the Mesolithic to the Middle Ages

The body part representation of brown bears from Mesolithic sites shows that usually all body parts were brought to the settlements (Figs. 6–7). Skulls and mandibles occur in rather low frequencies, but loose teeth, mainly molariform ones, are usually well represented and thus show that the heads were brought to the settlements (Fig. 6). Bones from the vertebral column are often present, mainly ribs and cervical vertebrae, as well as relatively high frequencies of long bones and bones from the paws, including phalanx 3 (claws). Further, this can be taken as an indication that the bear was often hunted in the vicinity of the settlements and few bones were left at the kill sites.

It is almost only at the Mesolithic sites that larger amounts of osteological bear remains have been found and where butchery marks could also be systematically analysed, which means that the butchering process can be studied in detail only for this period. The butchering is based on analyses of the sites of Ageröd I:HC, Tågerup, Ringsjöholm, Strandvägen, and Kanaljorden (Magnell 2006; Gummesson 2014; Gummesson et al. 2019). The frequency of butchery marks on bear bones is high (12–19 %); this is comparable to, or slightly higher than, the frequencies for commonly hunted animals, such as red deer and wild boar (Table 5). Cut marks from skinning have been found on the head (skull, mandible) as well as the metacarpals from the paws. Dismembering marks show that the bear carcasses had been cut up, the mandibles separated from the head, while the limbs had been sectioned in most joints from the shoulders and hips down to the phalanges of the paws. The filleting of meat occurred on different body regions, such as the mandibles, ribs, pelvis, and the long bones from anterior as well as posterior limbs (Fig. 8). All bear long bones seem to have been regularly fragmented and most likely marrow-fractured, as was the common practice for all other large wild game during the Mesolithic. Impact marks from marrow-fracturing have been found on the humerus and ulna.

Finds of tooth pendants – made of canines with drilled holes in the root apex – found at different sites such as Ringsjöholm, Skateholm, and Strandvägen, also show that the fangs of bears were worked and worn as ornaments and amulets (Larsson 1989, 372; Gummesson 2018, 62; Gummesson et al. 2019, 88). ZooMS (Zooarchaeology by Mass Spectrometer) and an analysis of leister points from Rönneholms Mosse have shown that long bones from bears were occasionally used for making bone points during the Mesolithic in Sweden (Jensen et al. 2020).

The body part frequency of the Neolithic sites differs from that of the Mesolithic ones by a larger proportion of bones from paws and a few from the trunk (Figs. 6–7). The lower occurrence of vertebrae and ribs might indicate hunting further away from the settlements during the Neolithic, with the trunk, after being stripped of meat, being left on the kill-sites more often in comparison with Mesolithic sites. The high proportion of bones from the paws may reflect transportation of this body part, probably as bear skins or amulets of bear claws, to the sites. Finds of carpal bones and claws

from the sites of Tråsättra, which was situated on an island in the archipelago of eastern middle Sweden, and Ajvide on Gotland show the transportation of paws or skins over larger distances from the mainland of Sweden during the Middle Neolithic (Hallin 2008, 5; Magnell 2019, 171).

The distribution of body parts from Bronze Age sites shows similarities to the Mesolithic ones with a rather equal distribution of bones from head, limb bones, and paws, but differs with its smaller amounts of bones from the trunk, as was the case for the Neolithic sites (cf. Figs. 6–7). This indicates that most parts of the bear were utilised, but the lower frequencies of bones from the trunk might reflect hunting at larger distances from the settlements, with certain body parts left on kill-sites. Most of the bear bones from the Bronze Age are from the site of Apalle in Uppland; because of this, body part frequencies of the period rather represent conditions at this site in particular and may not be representative for other settlements from the period.

The body part frequencies from the Iron Age and Middle Ages differ strikingly from the earlier periods in respect of bone finds from paws, mainly claws (phalanx 3) and a few finds of teeth, but there are no finds of bones from meaty parts (cf. Figs. 6–7). Most likely, the bones from paws represent bear skins. Either bones from the paws were left in raw skins brought to furriers in towns and settlements for further processing of the fur, or claws were still attached to bear skins. In most cases, these finds reflect the trading of bear skins, but in pre-Christian times they were probably also utilised in a symbolic sense, with skins used as wrappings or claws used as amulets.

Butchering marks on bear bones from the Viking Age cult site at Frösö church in Jämtland, with cut marks from skinning, dismembering of most joints and filleting of meat as well as chop marks from marrow fracturing and the extraction of canines, reveal that an intense utilisation of the bodies of bears also took place during the Late Iron Age in northern Sweden (Magnell/Iregren 2010, 235–237; cf. contribution by Magnell on Frösö, this volume).

Deposition and handling of osteological bear remains at settlements

At most Mesolithic sites in Sweden, bear bones are found mainly unburned in cultural layers, scattered among the bones of other animals and lithics in seemingly random patterns, just like any other waste. However, at some sites there are indications of a special treatment of bear bones, reflecting a symbolic importance of the bear to people in Sweden during the Mesolithic.

A tooth pendant made of a bear canine found in burial 41 in the Mesolithic cemetery at the site of Skateholm I most likely had symbolic significance (Fig. 9). The burial is a double grave with an older man and a child aged up to about four years. The tooth pendant was placed along with four pieces of amber on the chest of the child (Larsson 1989, 372–373). Tooth pendants from red deer and wild boar are rather common grave goods at Late Mesolithic burials in Sweden, while pendants of bear teeth are rare and probably had a specific symbolic meaning. Finds of bear figurines made of amber from the southern coastline of the Baltic Sea further indicate that brown bears had symbolic and ideological significance to the Stone Age cultures in southern Scandinavia (Vang Petersen 1998, 87–90; cf. Gross/Vang Petersen, this volume).

The frequency of gnaw marks on bear bones from Mesolithic settlements differs between sites, indicating a variation in the handling of bear bones (Table 5). At the settlements of Ageröd I:HC and Ringsjöholm, situated in the area of Lake Ringsjön, 21 % of the bear bones exhibit gnaw marks by carnivores, most likely dogs, while only 12–13 % of the bones of wild boar are gnawed. At sites from other regions, such as Tågerup and Strandvägen, the pattern is the opposite with no gnaw marks on bear bones there (Table 5). At some sites, it seems like the bones of bear were deliberately fed to dogs, while at other sites bear bones were placed out of reach of dogs, indicating a possible ritual treatment of these bones.

At the Mesolithic site of Bökeberg III, a concentration of bear bones, together with bones of other predators and bones/antlers with ornaments, has been noted in refuse layers which have been interpreted as representing zones for ritual activities on the shore areas by the settlement (Karsten 2001). A parallel to this has been noted at the site of Strandvägen with its concentration of bear bones and remains of other predators, as well as human bones and depositions of artefacts in an area with underwater stone packings by the shore of the River Motala (Molin et al. 2014; Gummesson/Molin 2016; Gummesson et al. 2019, 86–88).

The most obvious evidence of a Mesolithic ritual treatment of bear bones comes from the site of Kanaljorden, situated in the region of Östergötland (cf. Fig. 1), best known for its depositions of human skulls placed on an underwater stone packing at the bottom of a small lake (Hallgren/Fornander 2016). Kanaljorden is the Mesolithic site with clearly the largest proportion of brown bear remains in relation to other mammalian taxa, and the bear is also the second most occurring animal after wild boar, which is not the case for any other Mesolithic settlement. A discovery of the first five cervical vertebrae found in their correct anatomical position, representing a deposition of a piece of meat from the neck of a bear, is also an indication of the special treatment of bears at this site (Fig. 10). Further, two complete mandibles indicate a special handling of the bones since mandibles of larger mammals were usually marrow-fractured during the Mesolithic. The spatial distribution of the osteological remains at Kanaljorden also indicates different ritual zones, with human skulls in the central part of the stone packing, wild boar in the eastern part, and brown bear in the southern part (Fig. 10; cf. Gummesson 2014; Gummesson et al. 2018, 81–86).

Bear bones at ritual sites and ritual zones at settlements indicate a symbolic significance of the bear during the Mesolithic. However, a similar ritual treatment of bones can also be noted for many other animals, such as wild boar, red deer, and other predators as well (Karsten 2001, 144–147; Magnell 2006, 86–89; Gummesson et al. 2018, 81–86). It can thus be questioned if there was a similar distinguishing treatment of bear bones within the Mesolithic cultures in southern Sweden as it was characteristic for bear ceremonialism among many later circumpolar groups of people (Hallowell 1926; Zachrisson/Iregren 1974; cf. various contributions, this volume).

There are only very few finds of bear bones from Early and Middle Neolithic sites in the southern parts of Sweden associated with the Funnelbeaker culture. At the site of Flädie in Scania, a humerus of a bear was found together with cattle bones in a pit. Cut marks show that meat has been cut from the bone, but, other than the cattle bones (and common practice during the Stone Age), the humerus has not been marrow-fractured, but has been placed complete and unbroken in the pit (Hellgren et al. 2020). This can possibly be one of few indications of ritual treatment of bear bones by the Funnelbeaker culture in Sweden.

At the Pitted Ware settlement of Äs, situated in the region of Västmanland (cf. Fig. 1), bear teeth from the maxilla were found inside a ceramic vessel (Lepiksaar 1974, 150). Whether the teeth represent parts of the fragmented skull of a bear once deposited in the vessel is a bit uncertain, but this find possibly reflects the ritual treatment of brown bear body parts. Tooth pendants made of bear canines also occur at Korsnäs, another Pitted Ware settlement situated in the region Södermanland (cf. Fig. 1; Sjöling 2000, 24). Most finds of bear remains from Pitted Ware settlements are claws, or other bones from paws, recovered from cultural layers, and probably represent bear skins. However, it is possible that these skins did not only function as garments or rugs or carpets, but also had a symbolic meaning and use in various ritual practices.

Finds of clay figurines and carved bones and stones that have been interpreted as depicting bear heads have also been found on sites associated with the Pitted Ware culture, which indicates that bears had a specific meaning to this Middle Neolithic group (Wyszomirska 1984, 106, 244–245; Björck et al. 2019, 141; cf. Lindström, this volume).

Bear bones from Bronze Age sites have mainly been found scattered in cultural layers, and it is difficult to associate the osteological bear remains with special treatment. However, the find of a bear canine from the site of Ryssgärdet indicates a symbolic meaning beyond a utilitarian function (Wigh 2008, 377, 386). A later parallel is represented by a find from the Late Iron Age settlement of Varla in Halland, where a bear canine has been found in a pit dated to the 6th–8th centuries AD (Johansson 1997; 120, 189). Tooth pendants made of bear canines have also been found in the rich chamber burial of a child at Björkå, Ångermanland, dating to the Migration Period, and the burial of an adult woman from Önsvala in Scania, dating to the 6th century, where the bear tooth was found in a container with other kinds of amulets (Fransson 2011, 101; Larsson 2013, 143–144). Tooth pendants made of bear canines have also been found in the town of Sigtuna, in layers from the 11th century (Wikell 2015, 6, 10). The impressive bear canines seem to have been used as amulets during different periods, probably with varying symbolic functions, such as apotropaic magic for protection and as signals of identities.

Most of the faunal bear remains from the Iron Age and the Middle Ages are, as mentioned earlier, either distal phalanges (claws) or bones from paws, which most likely represent former bear skins. The bear bones either originate from archaeological sites and contexts associated with trading or a higher social status. Besides this, bear skins were an exclusive commodity, and the bear hunt itself was a dangerous activity that gave the successful hunter prestige, which could be associated with heroic deeds and the ideology of the aristocracy of the Late Iron Age and the Middle Ages (Oehrl 2013).

Finds of bear remains originate from the town of Birka as well as the sites of Bandelunda and Burge on Gotland, which were trading sites (Larsson 1997; Karlsson 2001; Wigh 2001). The only find of a bear bone from a Late Iron Age settlement in Scania is a so far unpublished claw (phalanx 3) from the central place of Uppåkra, discovered in layers of a sequence of halls probably representing the seat of the rulers of this settlement. Bear bones have also been found at the castle of Ekholmen in Västergötland, a stronghold associated with royalty in the Middle Ages (Lepiksaar 1991). Claws found in pits and cultural layers dating to the 11–13th centuries of the town of Lund come from either the residence of a canon or buildings associated with the Dominican convent in this town. Besides these bear phalanges, bones from other fur animals were also found during the excavation, indicating crafts associated with pelts in this part of the town (Fig. 11; cf. Hellgren/Magnell 2020).

In the northern parts of Sweden, evidence for the special treatment of bear bones can be noted from the Neolithic until modern times. A deposition of bear bones from Aspnäset in the region of Ångermanland, dated to about 2500 BC, is the earliest evidence of osteological bear remains being used for ritual activities in northern Sweden (Mulk/Iregren 1995, 11; cf. Iregren, this volume). Depictions of bears have also been found on rock carvings at Nämforsen, Ångermanland, and rock paintings at the site of Flatruet, Härjedalen (Hallström 1960, 95). This further indicates that the bear has for at least five thousand years been considered a sacred animal in the northern parts of Sweden. Finds of unburned mandibles and bear teeth deposited on top of a cremation burial, along with the antlers of mainly elk and reindeer, at the site of Krankmårtenhögen in Härjedalen, dating to the Early Iron Age, are later examples of the ritual treatment of bear bones from the northern parts of Sweden (Ambrosiani et al. 1984). The Sami bear burials show that ritual ceremonies with bear remains continued until the 19th centuries (Zachrisson/Iregren 1974; cf. Iregren, this volume).

Conclusions

Finds of brown bear remains in the zooarchaeological record for settlements in Sweden reflect the importance of the bear in hunting, the use of its meat and skin, as well as the symbolic significance of the animal through time and in different geographic regions. The frequency of bears is high in

periods when hunting played a significant part in subsistence, i.e. the Mesolithic and the Pitted Ware culture of the Middle Neolithic, and in northern Sweden until the Middle Ages. In periods with a larger focus on agriculture and animal husbandry, the frequency of bears is lower, and changes of the landscape and hunting pressure in certain agricultural core-areas in the southern parts of Sweden may have resulted in a depletion of the brown bear in certain regions already in the Late Bronze Age. The occurrence of bear bones at settlements and towns from the Iron Age and Middle Ages in the southern parts of Sweden rather reflects the trading of bear skins from hunting grounds in northern Sweden.

During the Mesolithic, the brown bear was frequently hunted and thus occurred at most sites. A slight decline over time from the Early to Late Mesolithic can possibly reflect a decrease in bear populations in areas around large settlements, due to hunting pressure and changes of vegetation and biotopes. The anatomical distribution with a representation of different body parts reflects hunting near to settlements, and butchering marks show the utilisation of skins, meat, and bone marrow, as well as of bones and canine teeth for the production of osseous tools and ornaments.

The few finds of bears at Early Neolithic settlements in the southern parts of Sweden indicate a decline in bear hunting as a reflection of the neolithisation and the decrease in the importance of hunting for subsistence during that period. The low frequency of bears at settlements from the Late Neolithic until the Middle Ages in the southern parts of Sweden is probably a reflection of economies based on agriculture and animal husbandry, but likely also of the depletion of bear populations in agricultural core areas of Southern Sweden. This depletion seems to have started during the Bronze Age in Scania and during the Iron Age in other regions. Bear finds from settlements and towns in the southern parts of Sweden from the Late Iron Age and the Middle Ages mainly consist of claws and other bones from paws, which most likely represent the trading of bear skins. In the northern parts of Sweden, an increase in the frequency of bears in the find material can be noted up until the Iron Age and the Middle Ages, which was probably due to an increasing demand for bear skins to export to other regions, as is reflected in the occurrence of bear claws in Iron Age burials on Gotland and in the Mälar valley.

Finds of bear bones in ritual contexts (excluding burials) in Sweden seem to be more closely associated with periods and cultures where hunting played a more significant role in subsistence and the way of life. The ritual treatment of bear bones can be viewed as a reflection of respect for certain predators by hunter-gatherers, who saw them as equal to humans. Further, ritual practices with bones also played a part in the social and symbolic interactions between humans, bears, and the spiritual world to ensure successful hunting.

In periods and cultures in which animal husbandry played a significant role in the economy, the examples of the ritual treatment of bear bones are few and thus reflect another relationship between humans and bears. Possibly, this is due to bears becoming a threat to livestock and a generally different relationship with wild animals among farming societies. The bones of bears from the settlements and towns of the Iron Age and the Middle Ages mainly represent bear skins, which may have had symbolic importance, but can mainly be interpreted as representing a commodity signalling wealth and inter-regional contacts.

The use of the impressive bear canines as tooth pendants and amulets from the Mesolithic until the Middle Ages reflects a symbolic importance of bears to humans in Sweden that has transcended through the ages. The exact symbolic meaning of the bear canines and their social signals likely varied between different periods, geographic areas, and social contexts, but can probably be related to an almost universal concept of strength and power associated with bears that prevails in the long-term relationship between humans and bears in Sweden, as in most parts of the world.

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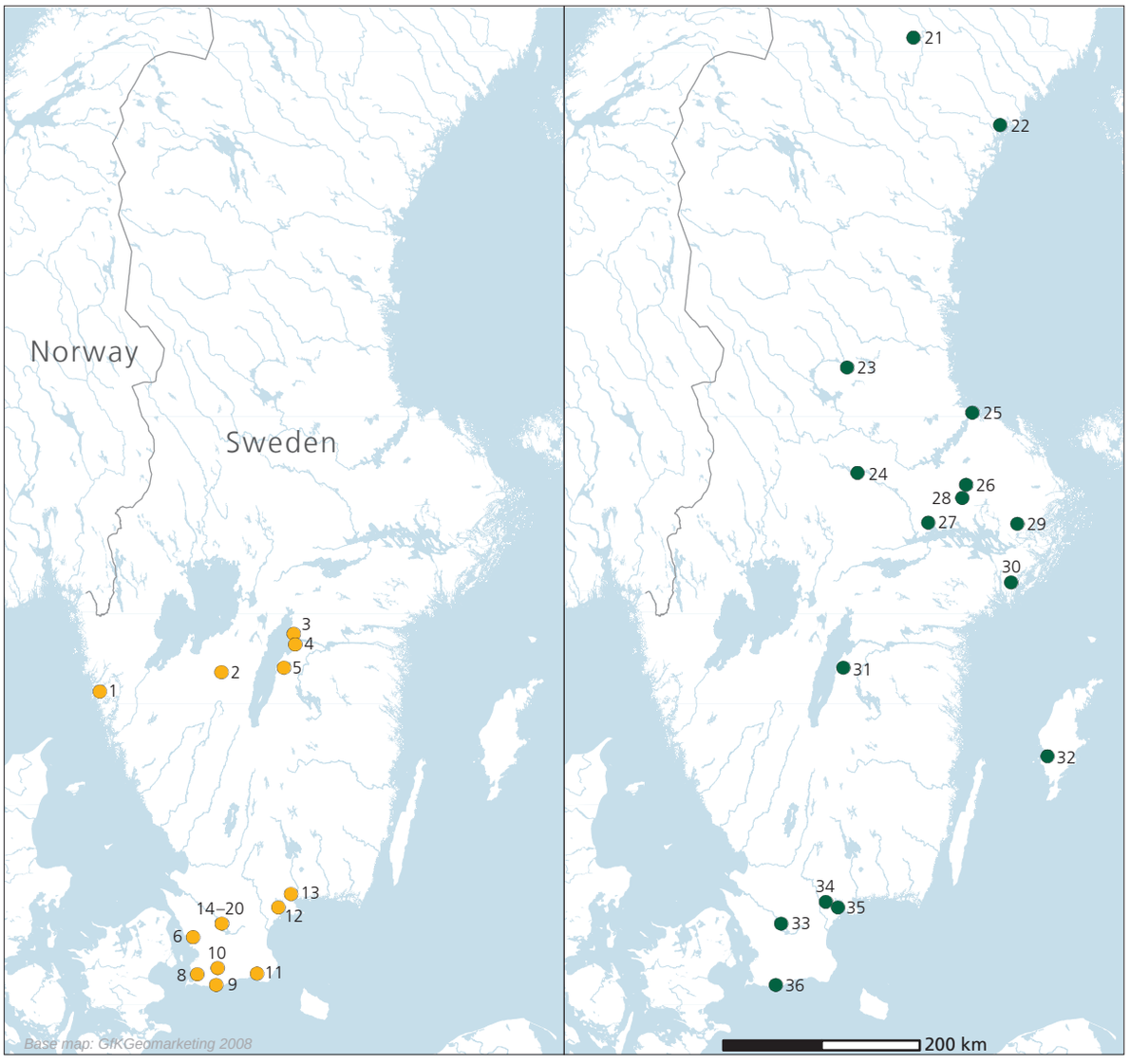


Fig. 1. Distribution of archaeological sites (NISP of faunal remains >100) with osteological remains of brown bear in Sweden. To the left – Mesolithic: 1: Huseby klev; 2: Almeö; 3: Kanaljorden; 4: Strandvägen; 5: Jussberg; 6: Tågerup I, II, III; 7: Segebro; 8: Arlöv I; 9: Skateholm I; 10: Bökeberg III; 11: Bredasten; 12: Nymölla III; 13: Sunnansund; 14: Ageröd I:HC; 15: Ageröd I:D; 16: Ageröd I:B; 17: Rönneholms Mosse; 18: Ringsjöholm; 19: Ageröd V; 20: Sjöholmen. To the right – Early and Middle Neolithic: 21: Åsele 1023–1024; 22: Bjästamon; 23: Ore 6; 24: Korsnäset/Grangärde 128; 25: Fräkenrönningen; 26: Sotmyra; 27: Äs; 28: Åloppe; 29: Tråsättra; 30: Korsnäs; 31: Alvastra; 32: Ajvide; 33: Sjöholmen; 34: Hunneberget; 35: Nymölla I; 36: Rävgrav. References and NISP of sites shown in Tables 1 and 2 (maps GIS department, ZBSA).

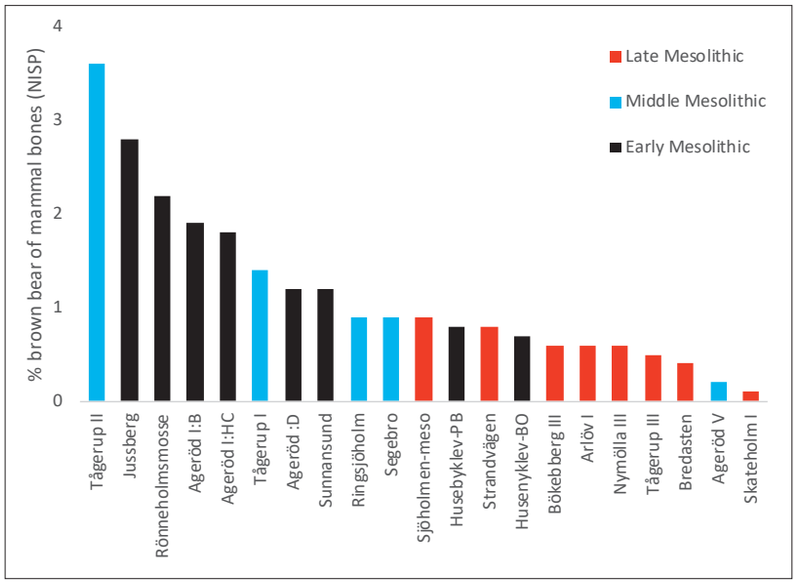


Fig. 2. Frequency of brown bears based on number of identified specimens (NISP) in relation to mammals at Mesolithic settlements in Sweden (ritual site Kanaljorden excluded).

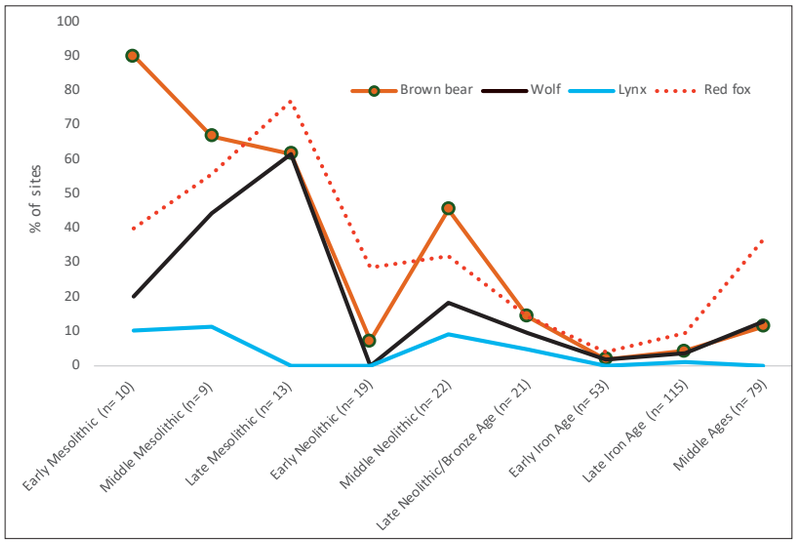


Fig. 3. Frequency of archaeological sites (NISP of faunal remains >100) with osteological remains of brown bear, wolf, lynx, and red fox from different periods in the southern parts of Sweden.

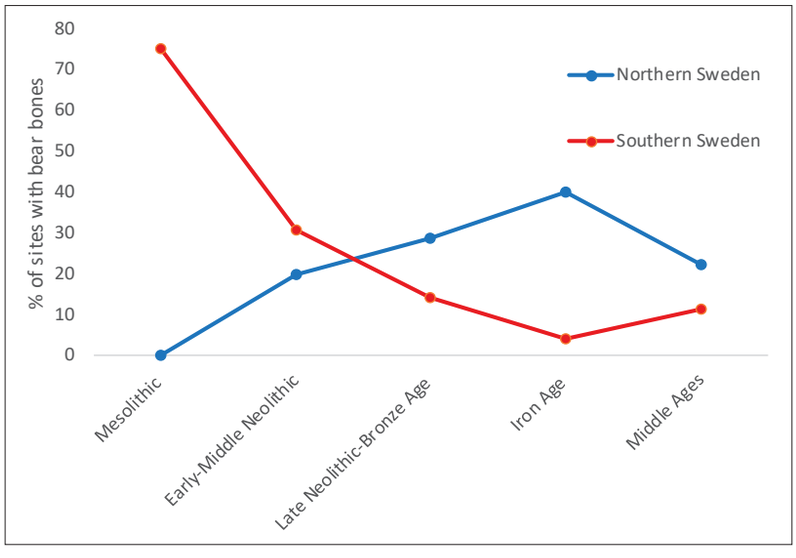


Fig. 4. Frequency of archaeological sites (NISP of faunal remains >100) with osteological remains of brown bear from different periods in the northern and southern parts of Sweden.

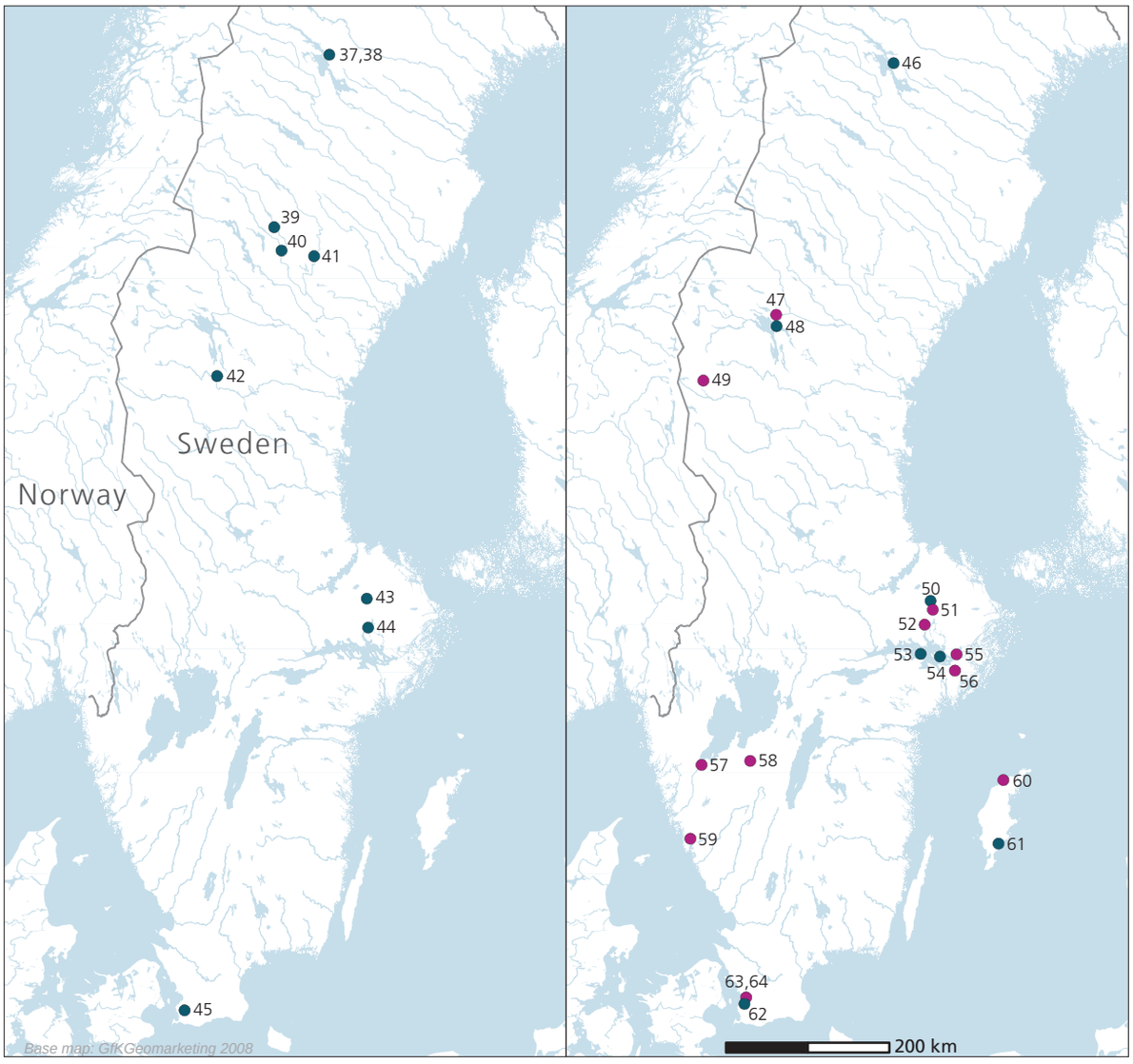


Fig. 5. Distribution of archaeological sites (NISP of faunal remains >100) with osteological remains of brown bear in Sweden. To the left – Late Neolithic and Bronze Age: 37: Arjeplog 532; 38: Arjeplog 522; 39: Tåsjö 154; 40: Bodum 26; 41: Åsele 1028; 42: Rätan 145; 43: Ryssgärdet; 44: Apalle; 45: Ängdala. To the right – Iron Age and Middle Ages: 46: Arjeplog 508; 47: Kyrklägdan; 48: Frösö kyrka; 49: Hedningsgärdet; 50: Kyrsta; 51: Kvarteret Kransen, Uppsala; 52: Kvarteret Trädgårdsmästaren, Sigtuna; 53: Birka; 54: Helgö; 55: Helgeandsholmen, Stockholm; 56: Tälje; 57: Ekholmen; 58: Kvarteret Rådhuset, Skara; 59: Varla; 60: Burge; 61: Bandelundaviken; 62: Uppåkra; 63: Kvarteret Färgaren, Lund; 64: Kvarteret Sankt Mikael, Lund. References and NISP of sites shown in Tables 3 and 4 (maps GIS department, ZBSA).

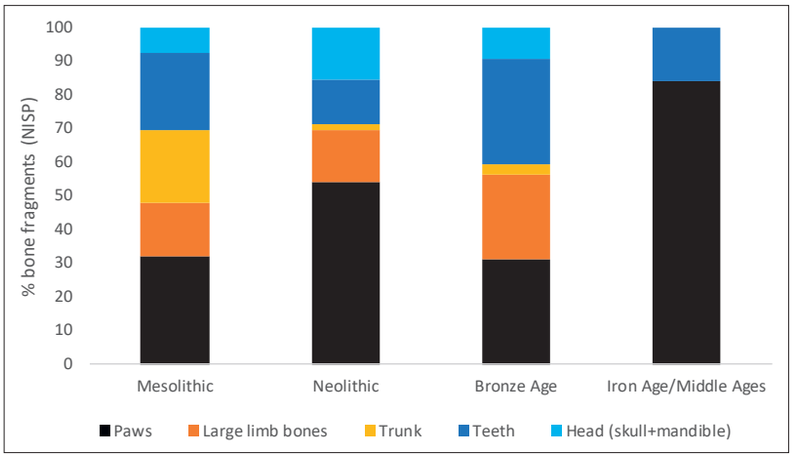


Fig. 6. Distribution of osteological remains of brown bear from five body parts found at settlements in southern parts of Sweden dating to different periods. The quantification is based on NISP and a compilation of several different sites from each period.

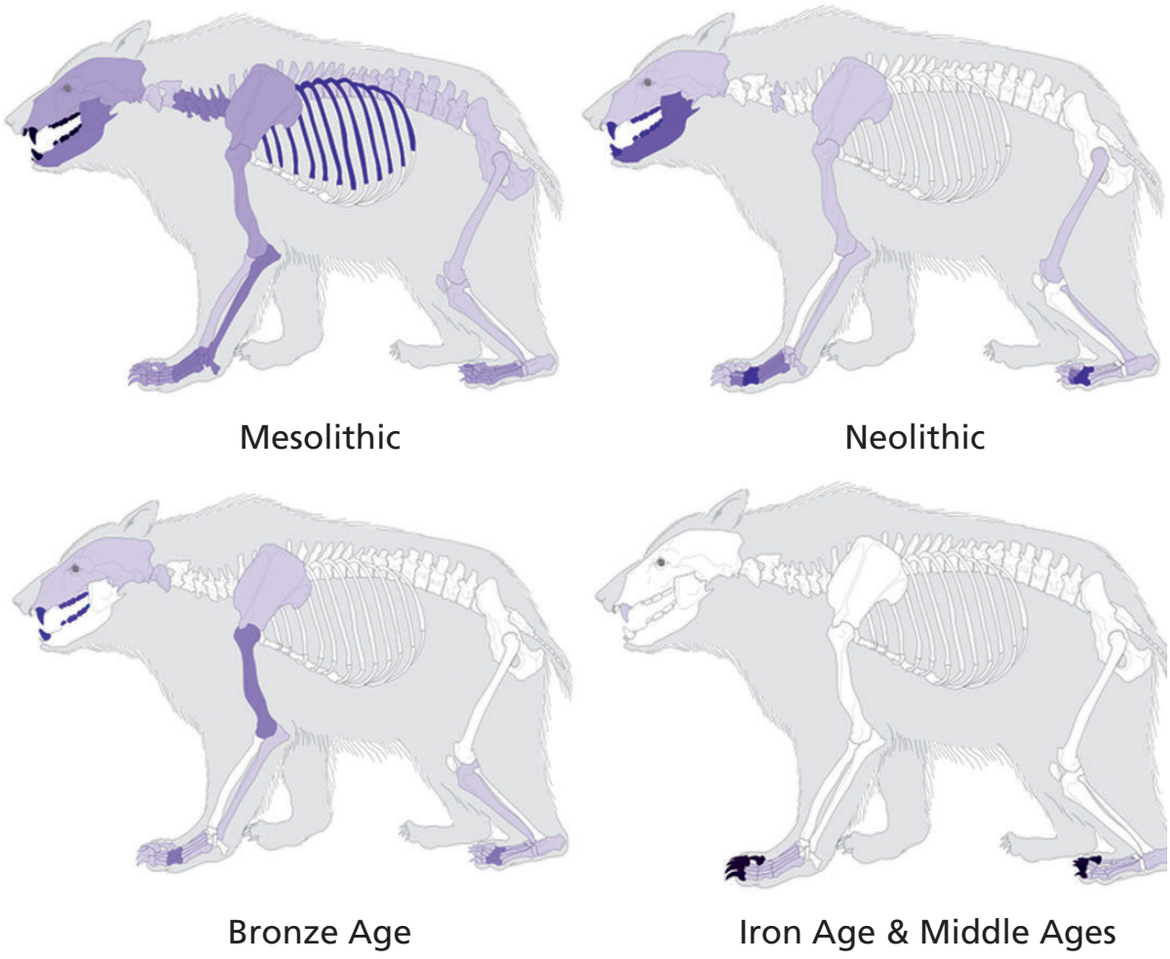


Fig. 7. Anatomical distribution of osteological remains of brown bear at settlement sites from the southern parts of Sweden, dating to different periods. Colouring indicates the presence of a bone element; the darker the colour, the higher the frequency of bone or teeth occurance (© 2003 ArcheoZoo.org; after Pales/Garcia 1981, pl. 13).

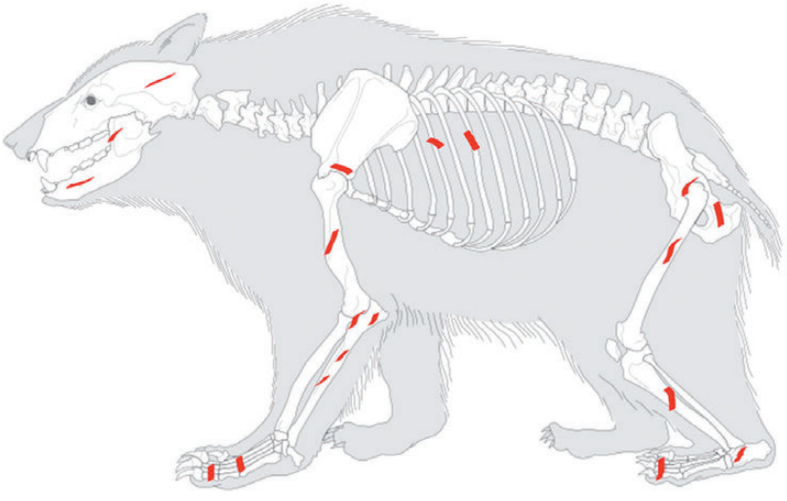


Fig. 8. Anatomical distribution of butchering marks on bear bones at settlement sites from the Mesolithic (© 2003 ArcheoZoo.org; after Pales/Garcia *1981, pl. 13).*



Fig. 9. Tooth pendants made of bear canines on the chest of a child from double burial 41 at the Late Mesolithic cemetery of Skateholm I (photo L. Larsson).

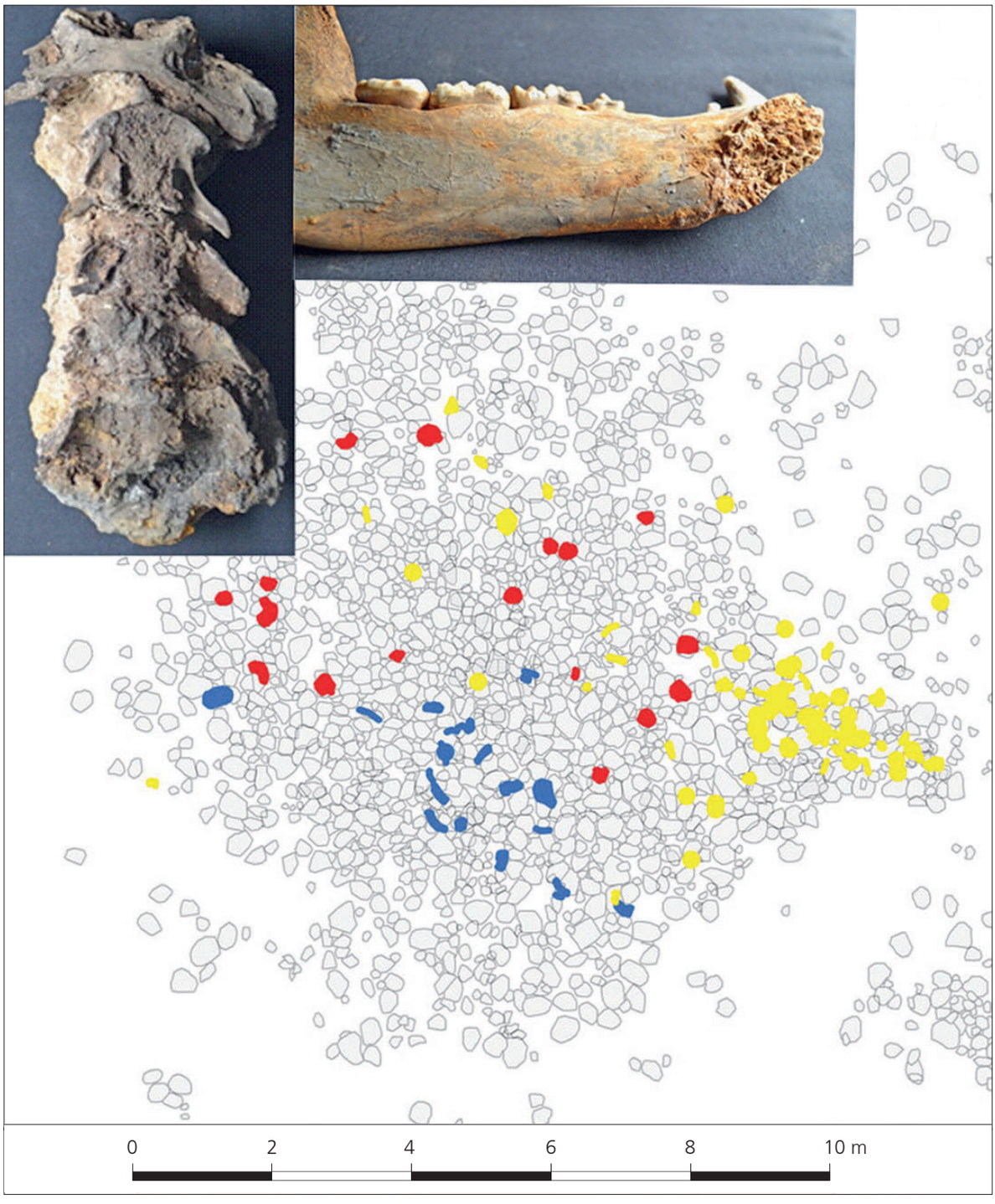


Fig. 10. Mandible and cervical vertebrae of brown bear in anatomical position from the Mesolithic ritual site of Kanaljorden. Spatial distribution of human bones (red), bones of brown bears (blue), and wild boar (yellow) on the stone packing (after Gummesson *2014, figs. 12; 16;* Gummesson *et al. 2018, fig. 9).*



Fig. 11. Phalanx 3 (claw) of a brown bear from the 11–13th centuries, found in the quarter Sankt Mikael in the town of Lund, in comparison with the skeleton of a recent bear (photo O. Magnell).

Table 1. Settlement sites with osteological remains of brown bear dating to the Mesolithic from Sweden, based on sites with total NISP (number of identified specimens) of mammals >100. EM = Early Mesolithic (9500–6400 BC); MM = Middle Mesolithic (6400–5400 BC); LM = Late Mesolithic (5400–3900 BC). Numbers of sites refer to numbers shown on maps of Fig. 1.

Site	County	Dating	NISP	Reference
1a: Huseby klev (Preboreal phase)	Bohuslän	EM	3	Jonsson 2005; Boethius 2018
1b: Huseby klev (Boreal phase)	Bohuslän	EM	1	Jonsson 2005; Boethius 2018
2: Almeö	Västergötland	EM	5	Arnesson-Westerdahl/Ericson 1989
3: Kanaljorden	Östergötland	MM	214	Gummesson 2014
4: Strandvägen	Östergötland	LM	26	Gummesson et al. 2019
5: Jussberg	Östergötland	EM	4	Gummesson 2019
6a: Tågerup phase I	Skåne	MM	23	Eriksson/Magnell 2001a
6b: Tågerup phase II	Skåne	MM	8	Eriksson/Magnell 2001a
6c: Tågerup phase III	Skåne	LM	2	Eriksson/Magnell 2001a
7: Segebro	Skåne	MM	17	Lepiksaar 1982
8: Arlöv I	Skåne	LM	2	Jonsson 1988
9: Skateholm I	Skåne	LM	2	Jonsson 1988
10: Bökeberg III	Skåne	LM	9	Eriksson/Magnell 2001b
11: Bredasten	Skåne	LM	10	Jonsson 1986; Magnell 2006
12: Nymölla III	Skåne	LM	1	Wyszomirska 1988
13: Sunnansund	Skåne	EM	19	Boethius 2017
14: Ageröd I:HC	Skåne	EM	67	Boethius et al. 2020
15: Ageröd I:D	Skåne	EM	2	Lepiksaar 1978
16: Ageröd I:B	Skåne	EM	3	Lepiksaar 1978
17: Rönneholms mosse	Skåne	EM	2	Magnell 2011
18: Ringsjöholm	Skåne	MM	21	Magnell 2006
19: Ageröd V	Skåne	MM	1	Lepiksaar 1983
20: Sjöholmen (lower layers)	Skåne	LM	12	Berlin 1930; unpublished data

Table 2. Settlement sites with osteological remains of brown bear dating to the Early and Middle Neolithic in Sweden. Based on sites with total NISP (number of identified specimens) of mammals >100. EN = Early Neolithic (3900–3300 BC), MN = Middle Neolithic (3300–2300 BC), LN = Late Neolithic (2300–1800 BC); BA = Bronze Age (1800–500 BC); x = quantification of NISP unknown. Numbers of sites refer to numbers shown on maps of Fig. 1.

Site	County	Dating	NISP	Reference
21: Åsele 1023–1024	Ångermanland	MN (LN, BA)	3	Ekman/Iregren 1984
22: Bjästamon 23	Ångermanland	MN–LN	x	Ekman/Iregren 1984
23: Ore 6	Dalarna	MN	253	Ekman/Iregren 1984
24: Korsnäset/ Grangärde 128	Dalarna	MN	8	Ekman/Iregren 1984
25: Fräkenrönningen	Gästrikland	MN	2	Olson et al. 2011
26: Sotmyra	Uppland	MN	1	Segerberg 1999
27: Äs	Västmanland	MN–LN	12	Lepiksaar 1974
28: Åloppe	Uppland	MN	3	Gummesson 2009
29: Tråsättra	Uppland	MN	2	Magnell 2019
30: Korsnäs	Södermanland	MN	3	Aaris-Sørensen 1978
31: Alvastra	Östergötland	MN	3	During 1986
32: Ajvide	Gotland	MN	1	Hallin 2008
33: Sjöholmen (upper layer)	Skåne	MN	2	Berlin 1930; unpublished data
34: Hunneberget	Skåne	MN	1	Magnell 2004
35: Nymölla I	Skåne	MN	22	Mannermaa/Von Moscinsky 2001
36: Rävgrav	Skåne	EN–MN	x	Larsson 1992

Table 3. Settlement sites with osteological remains of brown bear dating to the Late Neolithic and Bronze Age in Sweden, based on sites with total NISP (number of identified specimens) of mammals >100. M = Mesolithic (9500–3900 BC); N = Neolithic (3900–1800 BC); LN = Late Neolithic (2300–1800 BC); BA = Bronze Age (1800–500 BC); EIA = Early Iron Age (500 BC–AD 400); IA = Iron Age (500 BC–AD 1050); x = quantification of NISP unknown. Numbers of sites refer to numbers shown on maps of Fig. 5.

Site	County	Dating	NISP	Reference
37: Arjeplog 532	Lappland	N, BA, EIA	3	Ekman/Iregren 1984
38: Arjeplog 522	Lappland	BA, EIA	7	Ekman/Iregren 1984
39: Tåsjö 154	Ångermanland	LN, BA, IA	2	Ekman/Iregren 1984
40: Bodum 26	Ångermanland	M, N, BA, IA	3	Ekman/Iregren 1984
41: Åsele 1028	Ångermanland	M, BA	2	Ekman/Iregren 1984
42: Rätan 145	Jämtland	LN–BA	5	Ekman/Iregren 1984
43: Ryssgärdet	Uppland	BA	2	Wigh 2008
44: Apalle	Uppland	BA	33	Ericson et al. 2003
45: Ängdala	Skåne	BA	x	Nilsson 2006

Table 4. Settlement sites with osteological remains of brown bear dating to the Iron Age and the Middle Ages in Sweden, based on sites with total NISP (number of identified specimens) of mammals >100. EIA = Early Iron Age (500 BC–AD 400); RIA = Roman Iron Age (0–AD 400; MP = Migration Period (AD 400–550); VP = Vendel Period (AD 550–800); VA = Viking Age (AD 800–1050); MA = Middle Ages (AD 1050–1500); x = quantification of NISP unknown. Numbers of sites refer to numbers shown on maps of Fig. 5.

Site	County	Dating	NISP	Reference
46: Arjeplog 508	Lappland	RIA	1	Ekman/Iregren 1984
47: Kyrklägdan	Jämtland	MA	2	Holmgren 1985
48: Frösö kyrka	Jämtland	VA	256	Magnell/Iregren 2010
49: Hedningsgärdet	Jämtland	MA	1	Hansson 1992
50: Kyrsta	Uppland	EIA	1	Sjöling/Bäckström 2006
51: Kv. Kransen, Uppsala	Uppland	MA	x	Jonsson 1984
52: Kv. Trädgårdsmästaren, Sigtuna	Uppland	VA–MA	3	Hårding 1990
53: Birka	Uppland	VA	9	Wigh 2001
54: Helgö	Uppland	RIA–VP	x	Kind information by B. Stolle, Osteoarkeologiska forskningslaboratoriet, Stockholms universitet
55: Helgeandsholmen, Stockholm	Uppland	MA	1	Vretemark 1997
56: Tälje	Södermanland	MA	1	Karlsson 2009
57: Ekholmen	Västergötland	MA	1	Lepiksaar 1991
58: Kv. Rådhuset, Skara	Västergötland	MA	1	Vretemark 1997
59: Varla	Halland	MP–VP	1	Johansson 1997
60: Burge	Gotland	MA	1	Karlsson 2001
61: Bandelundaviken	Gotland	VA	1	Larsson 1997
62: Uppåkra	Skåne	MP–VP	1	Unpublished data
63: Kv. Färgaren, Lund	Skåne	VA–MA	1	Ekman 1973
64: Kv. Sankt Mikael, Lund	Skåne	MA	2	Hellgren/Magnell 2020

Table 5. Frequency of butchering and gnawing marks on bones of brown bear and wild boar at four Mesolithic sites in % (cf. Magnell 2006; Gummesson et al. 2019).

	Butchering marks		Gnawing marks	
	Brown bear	Wild boar	Brown bear	Wild boar
Ageröd I:HC	19.0	9.7	20.7	12.9
Ringsjöholm	12.5	21.0	20.8	12.3
Tågerup	11.8	15.0	0.0	9.0
Strandvägen	15.4	3.3	0.0	3.7

Zooarchaeological brown bear (*Ursus arctos*) finds in eastern Fennoscandia

By Kristiina Mannermaa, Tuija Kirkinen and Suvi Viranta-Kovanen

Keywords: Fennoscandia, bears, human-bear relationships, osteology, animal hair identification

*Abstract: In Finland, the present-day brown bear (*Ursus arctos*) population is just over 2,000 animals, and the species has been classified as "near threatened" in the country. Today, bear tours are sold to tourists, during which the animals are fed with carcasses and then observed and photographed from special cabins. Simultaneously, the bear population is regulated by hunting, and bear meat is considered a delicacy (although rarely eaten). In ethnographic sources that describe the traditional Finno-Karelian bear hunting ritual in detail, the bear was treated as near-human with the potential to be an ancestor. The aim of these rituals was to secure the rebirth of the bear. In this paper, we present the zooarchaeological find material related to the bear, i.e. burnt and unburnt brown bear bone finds as well as keratinous bear pelt remains and hairs from sites in Finland and on the Karelian Isthmus, dating from the Mesolithic to medieval times (c. 10,000 cal BP to AD 1500). Based on these finds, we discuss the roles of the bear from its first immigration into the region to the Middle Ages.*

Introduction

The Finno-Karelian epic, ritual poetry and ethnographic sources are rich in references to the brown bear (*Ursus arctos*). At the core of this tradition is the slaying of a bear, a ritual drama which began with the killing of the bear in its winter den, culminated in the ritual wedding of the bear and a maiden, and ended by the returning of the bear's bones back to the circle of life. This was done by hanging the skull up on a tree and burying the bones at the foot of a sacred pine (Fig. 1; see Piludu, this volume; Holmberg [Harva] 1915; Haavio 1967; Honko 1993; Pentikäinen 2007; Krohn 2008; Siikala 2008; 2012).

The Finno-Karelian bear rite has its roots in circumpolar bear ceremonialism, which has been documented widely in northern America and Eurasia, e.g. among the Sámi and many Siberian peoples (e.g. Hallowell 1926; Äikäs et al. 2009, 118; Sarmela 2009, 80; see also Rydving, this volume; Iregren, this volume). The rite has been practiced by northern hemisphere hunting populations, hypothetically since the Palaeolithic (Zvelebil 1997; Sarmela 2009, 80; Conneller 2011, 365–366; Siikala 2012, 381). At the core of the Finno-Karelian tradition was the idea of the bear's divine origin and its relationship to humans (Itkonen 1948b, 364–366; Haavio 1967, 16–41; Krohn 2008, 146–164; Sarmela 2009, 79–94; Siikala 2012, 368–370; Witzel 2013; see also Russell 2012, 52–58, 168–170).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 235–264 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134336

Archaeologist Knut Helskog has analysed these practices in the ethnohistoric record from the circumpolar arctic and examined the meanings that were associated with bears among prehistoric hunter-fisher-gatherer populations in northern Fennoscandia (Helskog 2012). However, his extensive analysis did not focus on Finland in particular, nor on bone and other perishable materials. Most notably, Helskog (2012) did not find a uniform pattern in the representation or contexts of bear finds; instead, he argues that clear variations exist in how bears were hunted, killed, ritualised and cosmologised. Accordingly, when Oliver Grimm studied bear phalanges and the remains of bear pelts found in Iron Age burials in Scandinavia and central Europe, he noticed that the material does not support a uniform explanation for the finds (Grimm 2013).

In this paper, we combine the data from the zooarchaeological find material, i.e. burnt and unburnt brown bear bone finds as well as keratinous bear pelt remains and hairs from the Finnish sites dating from the Mesolithic to medieval times (*c.* 10,000 cal BP to AD 1500). We present the spatial and temporal distribution of archaeological brown bear bone finds across Finland and the Karelian Isthmus, and we discuss the data in terms of the immigration history of the brown bear in Finland as well as the utilisation of the species by prehistoric and early historical people during different cultural periods. The anatomical composition of individual bone assemblages was recorded to study possible differences between chronological periods, as well as between sites with different characters. Based on these results, we build a nuanced picture of the prehistoric and early historical ways of treating brown bear bones and skins in settlement sites, burials, and other ritual contexts.

Brown bear populations in Finland

General remarks

The brown bear is a part of the forest fauna in modern northern Eurasia. In Fennoscandia today, the bear population is regulated by hunting especially in the reindeer herding areas in Lapland. Hunting takes place in the autumn and is often performed with a special breed of dogs, the Karelian bear dog. The Karelian bear dog is an original Finnish breed, but these bold dogs are also used in other countries to hunt and scare bears away from human activities. The Karelian bear dog is probably descended from local dogs, and their traditional use for bear hunting may extend back to prehistory (Pohjoismäki et al. 2018).

Today, the brown bear is classified as "near threatened" (NT) in Finland by the IUCN Red List. It nearly faced extinction in all Nordic countries in the 19th century, and the populations have only recovered during the past 30 years (Zedrosser et al. 2001). The main reason for its recovery was the immigration of bears from Russia. The Finnish bear population continues to receive gene flow (migrating individuals) from Russia, but also, in the north, to a lesser extent from Scandinavian bears (Kopatz et al. 2014). The gene flow from Finland to southern Scandinavia is very limited. The Finno-Russian bears remain largely isolated from Norwegian and Swedish bears.

This pattern is similar to that found in prehistory. During the re-colonisation – after the ice sheet had retreated in the early Holocene (*c.* 12,000 years ago onwards) – the Scandinavian bear population derived from the western lineage, whereas the Finnish bears originated from the eastern one. The two lineages spread from the Last Glacial Maximum (LGM) refugia in Europe. The western lineage had its refugia on the Iberian peninsula, as well as in Italy and the Balkans, whereas the eastern lineage had Carpathian origins (Taberlet/Bouvet 1994).

Bear remains are very common finds in postglacial subfossil materials in southern and central Europe. Among the order Carnivora, it is second only to the red fox in the frequency of occurrence (Sommer/Benecke 2005). The subfossil abundance is probably due to the fact that bears were widespread and common, but also that they hibernated in caves, where they occasionally died and their

remains preserved well (e.g. Sabol 2005). Whereas most bear subfossils in southern and central Europe are unconnected with humans, this is not the case in Finland, where all (or most) of the material is human refuse or derives from bear burials or graves.

The earliest Finnish burnt bear bone find (from Malmio IA settlement in Savukoski, northern Finland) dates so early (*c.* 10,000 years; Nurminen 2020) that it must be very close to the actual arrival of the species.

Distribution history

The brown bear co-evolved in the Middle Pleistocene of Eurasia, and it co-occurred and probably co-evolved alongside Palaeolithic hunters. Both humans and bears became highly adapted to the Quaternary climatic fluctuations. It is most probable that humans have negatively affected the size of bear populations since the beginning of the Holocene (Albrecht et al. 2017).

It is likely that even during the LGM there were periods when fauna, including bears, were able to occupy territories beyond their refugia. The post-LGM bear populations show a consistent presence in the changing environments, e.g. in the northern Urals (Bachura/Kosintsev 2006) and the Alps (Döppes/Pacher 2014). Changes in seasonal temperatures may affect population sizes, but this is not shown in the fossil record (Albrecht et al. 2014). However, genetic evidence reveals that the lineage from the Carpathian refuge did not intermix with the southern or other lineages (Davison et al. 2011), which also indicates a distribution route for bears similar to the postglacial spread of humans (*c.* 12,000 cal BP onwards). The fossil (subfossil) record of bears is incomplete and does not provide a complete postglacial history. The earliest record in the Baltic area comes from Estonia and is dated to the Preboreal period (10,300 to 9000 years ago; Sommer/Benecke 2005).

Material and methods

Research area

The research area covers the Finnish mainland but excludes the Åland Islands (see Gustavsson/Ljungkvist, this volume), which most likely have never had a permanent brown bear population of their own. The Karelian Isthmus was formerly divided by the Finnish-Russian border until the border was moved following World War II; find material archived in Finland (before 1945) is included in the cases surveyed here (Fig. 2).

Zooarchaeological research material

The research material consists of zooarchaeological brown bear finds, i.e. hard and soft products and waste such as bones, teeth, claws, pelts and hair, excavated from archaeological contexts. A central factor affecting the preservation of organic materials in Finland is the acidity of soils, which causes the relatively fast decaying of unburnt bones and untanned skins (Arponen 2008; Hurcombe 2014, 93). Burning, however, improves the preservation of bones considerably (Ukkonen 2001).

Osteological material

The osteological material from the Finnish Stone Age consists almost exclusively of burnt bones. From the Iron Age on, both burnt and unburnt bones have been found, mostly depending on the character of the site, and burnt bones have been found especially in cremation burials and also, to a minor degree, in settlement site layers. The Stone Age assemblages consisting of burnt and fragmented bones present many challenges. Fragmentation affects the number of identifiable taxa (e.g. Ukkonen 2001; Seitsonen et al. 2017). The material can also be biased due to the morphology, size and histology (Vaneeckhout et al. 2013) of bones, which leads to uneven preservation (Iregren/

Jonsson 1973; Okkonen 1991; Lyman 1994, 386–390; Sigvallius 1994; Ukkonen 2001; Mannermaa 2008). For example, when a bone from a large animal breaks into smaller pieces, these pieces often have fewer diagnostic features compared to equivalent pieces of bones from smaller animals.

The archaeological data from the brown bear bone finds have been collected from Kirkinen (2017) and Ukkonen/Mannermaa (2017). These lists have been updated from the literature and the osteological reports from 2017–2020 archived in the Finnish Heritage Agency. Osteological analyses were conducted by several osteologists over a long period of time (Table 1). The treatment of the (burnt/unburnt) bones, anatomical elements, find context and geographical location of the finds were recorded for all assemblages.

Hair finds

Keratin animal fibres, such as wool and hair, are not as prone to acidity as e.g. bast fibres, and minuscule hair fragments have been found even in Stone Age contexts (Ahola et al. 2018; Kirkinen 2019a; see also Wilson 2008; Wilson/Tobin 2010; Tridico et al. 2014). Skin tissue, which is composed mostly of collagen, is not usually preserved in the acidic soils of Finland without tanning, except in special cases (see Arponen 2008). This means that pelts can be seen mostly as clumps of loose hair in archaeological assemblages. Hair, as an organic soft material, is prone to degradation. As hairs burn or char in a fire, they have been almost entirely preserved in inhumation burials. Hairs have been found especially in Late Iron Age and medieval inhumation burials. The inhumation burial tradition started in southwestern Finland during the 6th century AD, where it appears to be connected to at least some Scandinavian immigration (e.g. Raninen/Wessman 2015, 281–282). Inhumation traditions appear to be connected to the early spread of, probably vernacularised, Christianity, especially during the period AD 1000–1150; in eastern Finland and on the Karelian Isthmus inhumation appears during the 12th century, where it is also connected to Christianisation. The furnishing of graves with pelts and fur garments ended gradually in western Finland in the 13th century AD, during the period of the so-called Baltic Crusades when church-authorised Christianity was aggressively asserted on local cultures from the west (e.g. Ahola/Frog 2014, 42–43). In eastern Finland and on the Karelian Isthmus, the most recent furnished graves have been ^{14}C- and coin-dated to the 14th–16th centuries (Mikkola 2009, 184; 2012; Laakso 2014, 130). Regarding northern Finland, the animal hair materials from the 17th-century Forest-Sámi burial ground of Mukkala have been included in the study.

In burials, hairs have been found especially in contact with metal items, the toxic alloys of which prevent the activity of fungi and bacteria (cf. Edwards 1989; Solazzo et al. 2014). Also, microbial- and chemical-induced breakdown can create an anoxic state in the grave and, with the persistence of these conditions, increase the possibility of the preservation of hairs (Wilson et al. 2001, 215).

The data concerning hair finds have been collected from Schwindt (1893), Kirkinen (2015; 2017; 2019a) and Kirkinen et al. (2019; 2020a; b). The hairs have been identified by their morphological features; no DNA results were available because of the acidity of the soils in Finland. The context and geographical location of the finds were recorded for all assemblages.

Dating

Eight bones, i.e. just a fraction of the bear finds, have been radiocarbon-dated (see Table 2). Most of the research material was dated on the basis of the typology of the human-made finds, e.g. pottery or brooches from the sites or their context (see Table 3). The archaeological dating is, however, problematic. In Finland, the prehistoric settlement sites often lack stratigraphy, resulting in layers that may represent several occupation phases. Also, the Iron Age cremation cemeteries under level ground, in which the majority of burnt brown bear phalanges have been found, are collective by nature (Wessman 2010). For these reasons, many of the sites are categorised as multiperiodic. Only

the Late Iron Age and early medieval inhumation burials as closed contexts can offer a relatively reliable archaeological dating for the bone and hair finds.

In this research, the material was divided into seven chronological periods after Ukkonen/Mannermaa (2017; cf. Fig. 2). Additionally, more detailed datings are presented in the text. All Stone Age periods 1–4 refer to populations practicing foraging economies. Farming and animal husbandry became a dominant subsistence only during the periods 5–6 (see Table 3).

Results

Osteological material

Brown bear bones have been identified at 77 archaeological sites. Both the number of sites containing brown bear bones and the number of identified bone fragments (431) is low, compared, for instance, to those for Eurasian elk (*Alces alces*; 4,050 fragments in 250 assemblages, situation in 2016). The spatial and temporal distribution of the sites is shown in Figure 2. Brown bear bones were recovered from all archaeological periods (Table 3) except Period 5 (Early Metal Period and Early Iron Age; 3750–1700 cal BP). However, some of the bones from mixed layers might derive from these periods, but this can only be confirmed by direct AMS-datings.

Eight brown bear fragments have been radiocarbon-dated (Table 2). The earliest finds come from the Early Mesolithic site of Malmio IA in Savukoski, the Late Mesolithic/Early Neolithic sites of Saamen Museo in Inari, Neitilä in Kemijärvi (northern Finland), and Käyrälampi in Kouvola (eastern Finland). Bones from the cremation cemetery of Rikalanmäki in Salo (southwestern Finland) date to the Late Iron Age.

All brown bear bones in Stone Age assemblages are burnt, and all historical bear finds are unburnt (Fig. 3). The majority of bear bones from the Iron Age are burnt. Unburnt bear bones are also found at some multiperiodic sites.

The distribution of bear finds by the character of their contexts is presented in Figure 4. Stone Age samples derive from occupation layers. An exception is Käyrälampi in Kouvola, a potential ritual deposition with several identified burnt bear bones from all skeletal parts and one burnt elk bone. Bear bones from Iron Age contexts derive from settlement sites, cemeteries and settlement-cemetery complexes. Historical bear finds were discovered at settlement sites (urban contexts in Tornio and Turku) and at other sites (the Sámi offering place of *sieidi* in Enontekiö and the Kuusistonlinna fortification at Kaarina).

The anatomical distribution of bear bones from different periods is shown in Figure 5. Phalanges form the majority of identified bear bones from all periods. Long bones are very rare. Some skull and mandible fragments or teeth have been identified in material from the Stone Age and historical times. Interestingly, practically all Iron Age bear finds are from phalanges; less than one percent of all finds derives from other elements than phalanges. The elements besides phalanges are two teeth used as pendants from Tursiannotko in Pirkkala, a complete canine from Ihananiemi in Sysmä, an ulna from Uusi-Ruskeala C in Hartola, and a molar and a metatarsus or metacarpus from Mulli in Raisio.

Most of the phalanges from the Iron Age and early medieval period, over 160 in total, are third phalanges, and they derive from cremation burials (Fig. 6). The find material consists of burned phalanges, or their proximal parts, as the fragile distal ends have often been fragmented by fire. The finds originate from over 20 cemeteries, the datings of which cover an almost 1000-year-long period of time from *c.* the 3rd to the 11th centuries. The majority of these sites (86 %) were so-called cremation cemeteries under level ground (400/600–1000 AD), which can be characterised as including both collective and individual cremations, with no visible structures above ground (for the definition see Wessman 2010, 19–24, 34).

Hair finds

Brown bear hairs (Fig. 7) have been identified in seven Late Iron Age and medieval inhumation burials at four cemeteries (Table 4). They have not been found in Stone Age or Bronze Age contexts. However, this might not be the real situation as soil samples from only two Stone Age burials have been analysed for fibres so far (Ahola et al. 2018; Kirkinen 2019b).

In Luistari cemetery (southwestern Finland), which is the largest Iron Age to historical period inhumation cemetery in Finland (Lehtosalo-Hilander 1982a; b; c; 2000), bear hairs have been found in three burials of the 23 graves analysed (Kirkinen 2015; 2017; Kirkinen et al. 2020b). Very interesting is the 11th-century female grave 56, in which minuscule bear hair fragments were found by microscope on top of the upper body of the deceased. These fragments were interpreted tentatively as the remains of a traditional *sieppuri* (Fig. 8), a garment made of a bear pelt by historical Sámi populations (Sirelius 1912, 50–51; Itkonen 1948a, 339). In the female burials 95 and 377, bear hairs have been hypothesised as the remains of grave furnishings (Kirkinen 2015).

Many of the burials with bear pelts are noteworthy due to their late date. In Ristimäki in Ravattula (southwestern Finland), the cemetery is located around the earliest known church foundations in Finland (12th–13th centuries), and the burials were Christian in character (Ruohonen 2017). Bear skin remains were identified from two female burials interpreted as grave furnishings (Kirkinen et al. 2020a). At Kekomäki in Kaukola (Karelian Isthmus), the richly furnished grave 1, with its remains of two female and two male individuals from the 13th century (Schwindt 1893, 16–32; Uino 1997, 233), contained bear hairs among other fur remains, such as unidentified furred animals, Cervidae, Phocidae, and mountain hare (Schwindt 1893; Kirkinen 2015).

At Mukkala in Savukoski (eastern Lapland), a former Forest-Sámi burial ground that has been coin-dated to the 17th century, several graves showed evidence of wrapping the deceased in animal pelts. In male grave III, the corpse was wrapped in a bear skin. Also, this burial falls into the Christianisation process of eastern Lapland, which is evidenced e.g. by the burial crosses and Christian motifs found at Mukkala (Leppäaho 1937; Kirkinen et al. 2019). As mentioned above, one grave in Mukkala also contained two bear tooth pendants.

Discussion

The chronology of zooarchaeological bear finds

Stone Age bear finds

Osteological assemblages that date to the Stone Age are almost entirely from settlement sites, where the burning of bones, e.g. in hearths, has enabled their preservation. The most numerous anatomical parts are phalanges, but metatarsals, metacarpals, tarsals, carpals and sesamoid bones have also been identified. From the head, cranial fragments and teeth are present, but not common. At first glimpse, the similar element distribution pattern looks as if it could indicate the use of pelts.

However, it is uncertain whether this anatomical composition reflects the real situation; the majority of the recorded fragments are dense bone elements, and it is this density that improves the survival of these elements when they are burned (Ukkonen 2001; Ukkonen/Mannermaa 2017). It is also this density that allows even small fragments of these anatomical elements to be identified. Teeth are rarely identified in burnt materials; burning destroys enamel, despite the fact that bone can survive better when burned or cremated.

Assuming that the bear element distribution and the small number of bear bones in Stone Age assemblages somehow reflect the real deposition situation, we can make some interpretations. The first, obvious interpretation would be that most Stone Age bear finds originate from skins. This picture would suggest that the importance of the uses and meanings associated with bear pelts and claws

is already visible in the Stone Age remains. The lack of bone types other than the extremities at the settlement sites might indicate that a bear carcass was treated (ritually) in a different way than, for example, elk and reindeer (*Rangifer tarandus*) carcasses. The impression achieved, based on the burnt assemblages from the Finnish Stone Age, is that most of the bear bones were either deposited somewhere other than the occupation sites, or that they were deposited in the occupation sites but the bones were not thrown on to the fire.

The ritual treatment of certain animals or animal parts has been indicated in some Mesolithic burials, where osteological material has been very well preserved. For example, in Late Mesolithic Skateholm (Sweden) many red deer (*Cervus elaphus*) antlers have been deposited in human burials (Larsson 2017). In graves at Late Mesolithic Yuzhniy Oleniy Ostrov in Karelia (northwestern Russia), it is mostly the incisors of elks and Eurasian beavers (*Castor fiber*) and the canines of brown bear that have been deposited (Gurina 1956; Mannermaa et al. 2021).

To use the absence of bones as an indication of the special treatment of body parts is very risky in archaeology, and even more so when the material consists of burnt bone fragments. It is not a surprise that all bear bones from the Stone Age in Finland derive from occupation layers; bone material (human skeletons and possible animal bones and bone artefacts) has not been preserved in millennia-old inhumation graves in Finland. Even the preservation of enamel, which is the hardest part of bone, is extremely rare (Ahola et al. 2018). Marja Ahola has summarised the data from the Stone Age inhumation burials, and none of them have yielded bear bones (Ahola 2019). This does not necessarily represent the original burial situation.

Bear canine pendants are commonly found in northeast European Stone Age burials (e.g. Gurina 1956). We can use the Yuzhniy Oleniy Ostrov cemetery as an example of the treatment of bear remains. Typically, bear canines are commonly found in the graves, but no other bear body parts are present. This indicates that bear canines held special symbolic meaning and were thus preferred. How were the remaining bear bodies treated, and where were they deposited? Assemblages from Mesolithic occupation sites in the area do not contain many bear finds (Savvateev/Vereshchagin 1987; Seitsonen et al. 2017). Again, this might be partly due to preservation circumstances; Karelia has similarly acidic soils as most of Finland (with a few exceptions, one of which is Yuzhniy Oleniy Ostrov). We cannot answer these questions here; at this stage, our knowledge of the Stone Age bone assemblages is too scarce. The material parallels Knut Helskog's research, in which he concludes that the lack of bones at the settlement sites might indicate the existence of site types that were preferred for the processing of bear bones (Helskog 2012, 217). Bear finds are also very rare at the Swedish Stone Age sites (see Magnell, on humans and bears in Sweden, this volume). Archaeological assemblages with bear canine pendants, such as Yuzhniy Oleniy Ostrov, and the absence of bear bones at occupation sites, support the results received from the Finnish Stone Age assemblages: Bear bones were already treated in a special way in the Stone Age in Finland (and northern Europe). The general paucity of bear bones at Stone Age sites indicates that bears were rarely killed and thus the meat might have been considered a special delicacy, or was a food consumed solely in ceremonial and ritual occasions.

The archaeological evidence of special bear (bone) burials is extremely scarce in northern Europe and derives mainly from historical time periods (see Iregren, this volume). Thus far, the Stone Age assemblage from Käyrälampi in southeast Finland is a rare example of a potential ritual bear burial site. The results will be published in detail in a forthcoming publication (Mannermaa et al. in prep.), but here we can conclude that there are no special reasons that oppose the idea of a ritual deposition, although the deposition did not exclusively contain bear bones.

Despite the problems in interpreting burnt bone assemblages, artistic depictions of bears suggest that in the Stone Age bears had a special status. This can be seen in the realistic-style stone artefacts depicting bears during the Neolithic and Early Metal Period (*c.* 4000–1000 cal BC; cf. Carpelan 1975; Mannermaa/Núñez forthcoming; Fig. 9a–c). Such bear-shaped artefacts are known from

various parts of Finland. Unambiguous bears are present in the rock art in Norway and Sweden but, interestingly, they are not depicted in Stone Age and Early Metal Period rock paintings in Finland (Lahelma 2008, 26–27; Helskog 2012). Generally, elks (or other cervids) are the most common animals depicted in these areas. Also, on the Kola peninsula and in Karelia, elk form the majority of the rock art depictions, but several bear pictures are also present (Kolpakov 2008; Kolpakov et al. 2008). Among the 1,200 figures seen at Zalavruga (near today's Belomorsk on the White Sea), there are 20 bears, while elk and beluga whale (*Delphinapterus leucas*) are much more numerous. On the east side of Lake Onega, the most frequently depicted animal in rock carvings is the swan (*Cygnus* sp.), followed by the elk and then the bear (Kolpakov 2008; Kolpakov et al. 2008).

Bronze Age and Early Metal Period bear finds

Despite the bear-headed stone items dated to the Early Metal Period, no bear bones have been identified from the Bronze Age/Early Metal Period (see Table 1) osteological finds. Bone materials from this period are generally scarce and most assemblages derive from cairns. The results of osteological analyses from the Bronze Age and Early Metal Period (3750–1750 cal BP) were listed in an unpublished database prepared for a book (Ukkonen/Mannermaa 2017). The total number of bone specimens from this period is 5,875 (data collected until 2012), but only a fraction of these has been identified taxonomically. The identified species or animal groups are mainly seals, Eurasian beaver, Eurasian elk, and wild reindeer, with occasional finds of mountain hare, pine marten, red fox, and common otter. Also, some domestic animals were identified. Pirjo Lahtiperä has suggested that human bodies were wrapped in seal furs, and placed on seal bones in burial cairns (Lahtiperä 1970). However, cremated animal bones from cairns have not been properly investigated in Finland, nor have their dates been confirmed by AMS-dating.

Does the absence of bear bone finds mean a discontinuation of bear symbolism, or is the gap in the Early Metal Period artificial, due to the poor preservation of bone and biases in deposition and find contexts? In general, burnt bone materials from prehistoric sites in Finland do not allow a detailed interpretation of the uses of bears, because a strong taphonomic bias is always associated with burnt bone assemblages.

Iron Age bear finds

During the Iron Age, the anatomical composition of the bear bone finds resembles the trend already observed in the Stone Age material. But in contrast, bear bones are almost absent at the settlement sites. The high number of third phalanges detected from the Middle and Late Iron Age cremation cemeteries is evidence that bears were hunted.

Many researchers (e.g. Petré 1980; Schönfelder 1994; Mäntylä-Asplund/Storå 2010; Lindholm/Ljungkvist 2016; Ukkonen/Mannermaa 2017, 182; for a discussion, see Grimm 2013) have interpreted the phalanges found in the Iron Age cremation burials as the remains of burnt bear pelts. Evidence of the placing of a bear pelt at the pyre of the deceased has been recorded in the secondary burial in Högom mound 4, Sweden (Ramqvist 1992, 194–198; Grimm 2013, 285, 292). Also, the remains of bear pelts, sometimes with claws still attached, have been detected in some Iron Age inhumation burials in Scandinavia and central Europe (see Grimm 2013).

Also, in Finland and on the Karelian Isthmus, bear hairs have been identified in single Late Iron Age and medieval inhumations (Table 4). They are part of a tradition of furnishing the graves with the pelts of large mammals, most often of Eurasian elk and wild forest reindeer (*Rangifer tarandus fennicus*), but sometimes also with the skins of cattle and bear (Kirkinen 2015; 2019a). However, in some cases the amount of bear hair is so small that it is impossible to define its function, since the pelts have been used for fur garments as well (see Kirkinen et al. 2020a).

In some cases, a possible explanation for the presence of the bones of distal extremities is that bear paws could have been used for magic and healing, as was the case during historical times (e.g. Lehikoinen 2009, 39, 171–172). From a Late Iron Age context, bear paw remains have been found in a ritual cairn in Myllymäki in Hattula, southern Finland (Sarkamo 1970).

The almost total absence of bear tooth pendants in Iron Age – also Late Iron Age – graves is another interesting fact, especially when comparing Finnish material to the ones of the neighbouring countries (see Grimm 2013). Thus far, an impressive bear tooth pendant has been found only in Suotniemi cemetery (KM 2487:7; Fig. 10) on the Karelian Isthmus. Additionally, two bear tooth pendants have come to light at the Tursiannotko Late Iron Age/early medieval period settlement site in the Häme region (Moilanen 2017). The general absence of bear tooth pendants from Finland has been taken into consideration when examining the so-called bronze bear tooth pendants (Fig. 11). This is a relatively common artefact type, found especially in Late Iron Age female inhumations (*c.* AD 700–900). These pendants have been interpreted as being connected with female fertility, protective magic, and as being symbolic expressions of control over the wilderness (Asplund 2005; Riikonen 2005; Kivisalo 2008). However, Tõnno Jonuks has recently questioned previous explanations and focussed on the fact that these pendants do not display the identifiable features of real organic bear canines (Jonuks 2017). Instead, he presents other possible explanations, from them being replicas of canids' teeth to representing fantastic creatures, such as dragons, which all served as symbols of ruling families.

Historical era

Evidence for the use of furs and pelts in funerary contexts continues until relatively late in Finland. Bear pelts have been detected in graves that date to the phase of Christianisation. From the 15th century onwards, the church aimed to stop the tradition by collecting bear pelts from parishioners and by using them in front of the altar as carpets (Korhonen 1982a; b; see also Østergård 2009, 120–121). Animal skins were replaced by textiles, and especially by rugs in burials (pall-clothes), the tufts of which probably imitated fur (Pylkkänen 1974, 27–31).

The bear finds from northern Finland indicate the high status of the bear as late as during the 17th century. In eastern Lapland, two bear canines, turned into pendants by perforation, were found in the *noaidi* (burial V) grave at Mukkala in Savukoski, a Forest-Sámi burial ground (Leppäaho 1937). In this cemetery, a bear pelt was used as a wrapping in burial III (Kirkinen et al. 2019). In Enontekiö, western Lapland, four bear upper molars were found in the *sieidi* of Näkkälä, and they most likely represent a bear skull offering (Äikäs et al. 2009).

In Tornio, southwestern Lapland, nine bear phalanges were found in a cluster in a house foundation; they most likely represent a complete bear paw, which has been interpreted as a house offering (Puputti 2010, 60). Sonja Hukantaival has studied historical house offerings in detail and has listed examples in which bear skulls, teeth, claws and paws have been utilised (Hukantaival 2016).

What about the missing bones?

Hunter-gatherers

In the Stone Age burnt assemblages from Finland, taphonomy may have played a major role in affecting the body part and species distribution. Also, as many Stone Age bone assemblages are from mixed contexts, and these contexts are not properly investigated and dated, the interpretations of these rare finds must be kept on a relatively general level. Furthermore, it is not easy to identify the character of human behaviour (for example, rituals or waste management) at so-called occupation sites, so this has not been done systematically in Finland.

Nevertheless, bear bones are rare in Stone Age occupation contexts, and bear bones were rarely deposited in refuse fauna, i.e. waste from domestic activities. The treatment of bear bones is thus different from those of other big game animals such as elk and wild reindeer. Despite the small number of

bear bones being a common phenomenon throughout the Stone Age, we must keep in mind that the Stone Age is a long period and contains many cultural phases and populations. There is no possibility to consider similarities or differences in attitudes towards the bear among prehistoric populations. However, a shared northern forest environment and the foraging economy can be considered as factors leading to potential similarities in attitudes toward bears and the place of the bear in culture, religion and mythology.

Farming populations

During the Iron Age, the present zooarchaeological material stresses that bear pelts were first placed on cremation pyres and in inhumations in Scandinavia and central Europe (Møhl 1978; Petré 1980; Schönfelder 1994; Gustavsson et al. 2014). The tradition spread to Finland from the west as part of a broader range of Germanic influence (Kirkinen 2017). Later on, bear skins were placed in inhumation burials, which is evidenced by the hairs found in graves (Kirkinen 2017; 2019; Kirkinen et al. 2020b).

In Scandinavia, the discussion about burnt bear phalanges has concentrated mainly on the question of whether or not the claws were associated with the male elité and warriorship. For example, in Sweden, Karl-Johan Lindholm and John Ljungkvist have concluded that the bear phalanges were first associated with the elité and males, and later with the middle class, too (Lindholm/Ljungkvist 2016).

Also in Finland, the burial type in which the burnt bear phalanges were recorded has been interpreted to indicate the warrior cult and power (see Salmo 1938, 308–310; 1941; Pihlman 1990; Schauman-Lönnqvist 1996a; b; 1999; Wickholm/Raninen 2006; Raninen 2007; 2009; Wessman 2010, 62–66). Kirkinen's research on Finno-Karelian Kalevala-metric poetry (Kirkinen 2017) yielded a group of poems and incantations that referred literally to the use of a burning skin for protection in war and in a mythical journey to the land of the dead. These verses have been connected to the same cultural sphere as the graves with phalanges (Siikala 1992, 294–296; 2002; 2014), which supports the hypothesis that these verses might be telling us about the cremation of bear pelts on pyres.

Lindholm/Ljungkvist (2016) interpret the lack of bear bones other than third phalanges as being connected with the trading of furs from the inland regions of Sweden. This is evident, e.g. on Gotland, which never had a local bear population (see Jordahl et al., this volume). Correspondingly, fur trading is also a possible explanation in Finland. However, the ethnographic and historical sources for the Sámi and Finnic traditions of bear ceremonialism suggest an alternative explanation in that the bones of the bear were disposed of in a ritual manner, such as returning them to the forest, as was the case in later practices (e.g. Holmberg [Harva] 1915, 47; Itkonen 1948b, 366; Haavio 1967, 34; Äikäs et al. 2009, 118; Siikala 2012, 388).

Conclusions

The interpretations of prehistoric and medieval human-bear relationships stress the importance of the bear to northern cultures. The characteristics of this relationship have been built on theories about the cosmologies of communities under study, extrapolating a central division between hunter-gatherer and farming groups. In the studies concentrating on hunter-gatherer populations, there is a tendency to see bears as ancestors, clan attributes, guardian spirits, and symbols of power (see e.g. Helskog 2012, with references; Losey et al. 2013), whereas concerning Iron Age farming groups bears and bear pelts have been seen as symbols of power, wealth and warriorhood (e.g. Petré 1980; Lindholm/Ljungkvist 2016). This dualism is, of course, oversimplified. Based on the Finnish material, we highlight that the cultural context needs to be taken into account in explaining the roles

of the bear for the community. On the basis of bear-related find material in Finland, it is possible to define geographical and/or chronological differences as well as the *longue durée* of a phenomenon in human-bear relationships.

The special powers of the bear are associated with skulls, canines, penis bones and third phalanges, as is supported by ethnographic examples from various parts in the circumpolar area (e.g. Hallowell 1926). Brown bear third phalanges are the most common finds in Stone Age occupation contexts, and it is tempting to hypothesise that most bear finds also from the Stone Age originate from skins. Yet, as mentioned earlier, taphonomic factors have likely biased the anatomical composition. The time span of the Stone Age in Finland covers approximately 7,000 years, and the amount of bear bones from this long period is only 102. It follows that this restricted assemblage is far from being representative. In the future, a detailed investigation of contexts and a systematic AMS-dating programme can shed more light on the Stone Age bear finds from Finland and help us to understand their meanings and functions.

As for the Iron Age find material, we follow Kirkinen (2017) and suggest that it is possible to define at least two human-bear cultures, the Germanic one that cremated the pelts along with the deceased, and the traditional Finno-Ugric one in which the bear was appreciated as a divine forefather.

We suggest that both the placing of pelts, as well as phalanges or complete claws loosened from the skins, in the graves represents the qualities and strength of the bear. This is supported by ethnographic data according to which the strength of an animal – and sometimes of a human being – is located in its hair and nails (Fig. 12; e.g. Pentikäinen 2007, 120–121, 139; Lehikoinen 2009, 171–172). Moreover, the bear was believed to have its origin in a curl of hair (Pentikäinen 2007, 138–139). Therefore, we suggest that sometimes real pelts were cremated, sometimes maybe paws, and sometimes the claws were used instead – but they all served the same goal, the acquisition of the qualities of a bear to facilitate the change from the realm of the living to the one of death.

Before we can make any far-reaching conclusions about the bear throughout prehistoric times in Finland, we need a systematic re-analysis of bear bones from archaeological sites. At the moment, the data is in lists of osteological reports that have been issued by several osteologists. The contexts of many prehistoric bear finds are not clearly understood and direct AMS-datings should be conducted on multiperiod sites. Also, the inhumation burials from the Stone Age and the Iron Age should be studied systematically for animal hairs. Proper understanding of contexts would help in interpreting the bone finds and their chronologies.

Acknowledgements

We want to thank Pirkko Ukkonen for the initiation and inspiration to write this paper. Pirkko also provided unpublished materials to us. Several osteologists and archaeologists have helped us gather materials for this paper, a collective thank you to all of you! We express our deep gratitude to Frog, Oliver Grimm, and one anonymous reviewer for their valuable comments on the manuscript.

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Fig. 1. A bear skull tree in Vuoskujärvi, Finnish Lapland, in 1914 (photo S. Paulaharju / Finnish Heritage Agency).

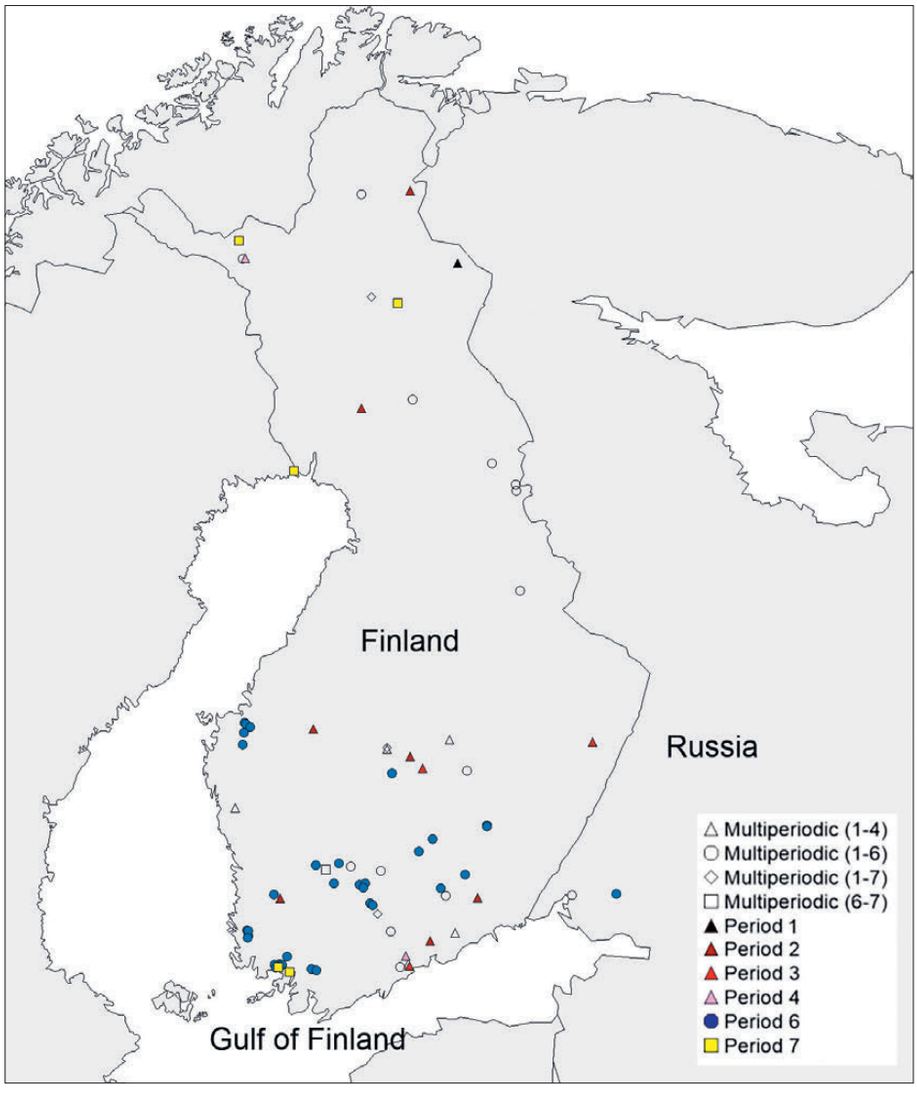


Fig. 2. The distribution of zooarchaeological bear finds in Finland and on the Karelian Isthmus. Period 1: Ancylus Lake stage, Mesolithic (11,200–8800 cal BP); 2: Litorina Sea stage, Mesolithic and Early Neolithic (8800–6000 cal BP); 3: Middle Neolithic (6000–5100 cal BP); 4: Late Neolithic (5100–3750 cal BP); 5: Early Metal Period (3750–1700 cal BP); 6: Late Iron Age and Early Medieval Period (AD 300–1500); 7: Urban Medieval and Historical Period (AD 1500 to present) (graphics T. Kirkinen).

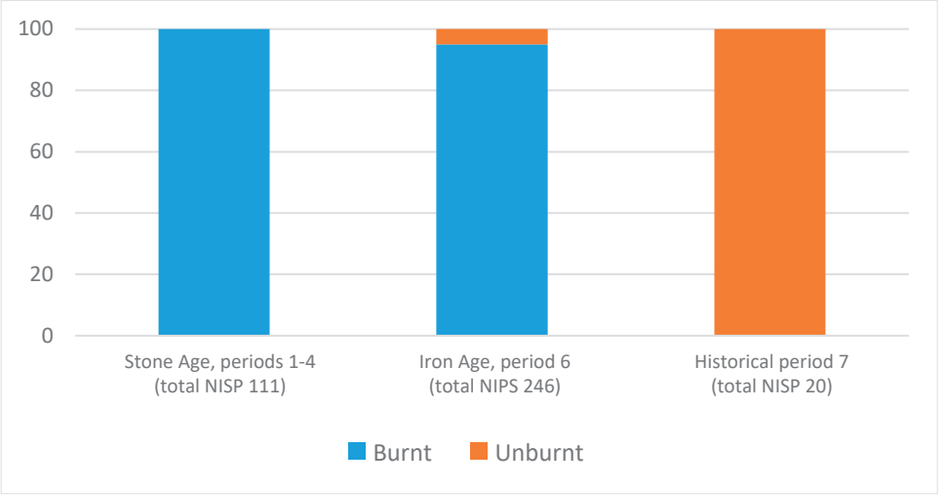


Fig. 3. The distribution of burnt/unburnt bear bone finds (in percentages). Sites with mixed Stone Age, Early Metal Period/Bronze Age, Iron Age and Historical period datings are excluded.

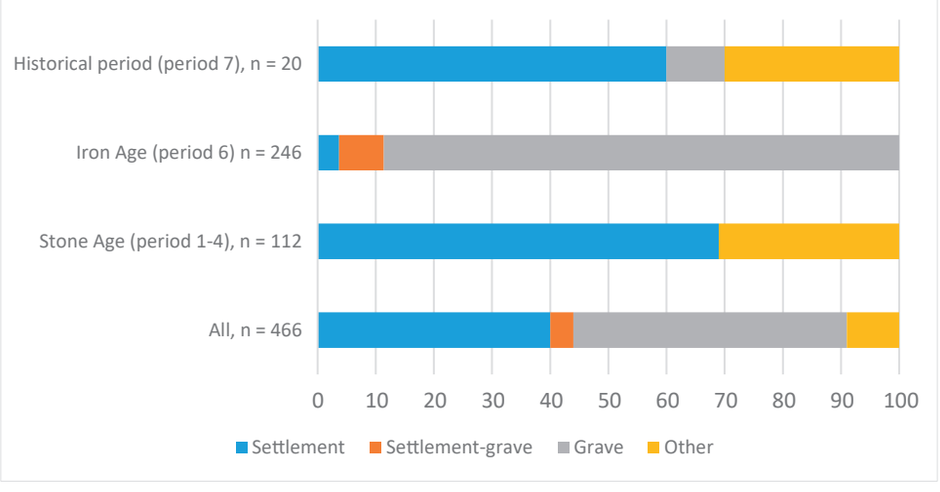


Fig. 4. Distribution of bear finds by contexts (in percentages).

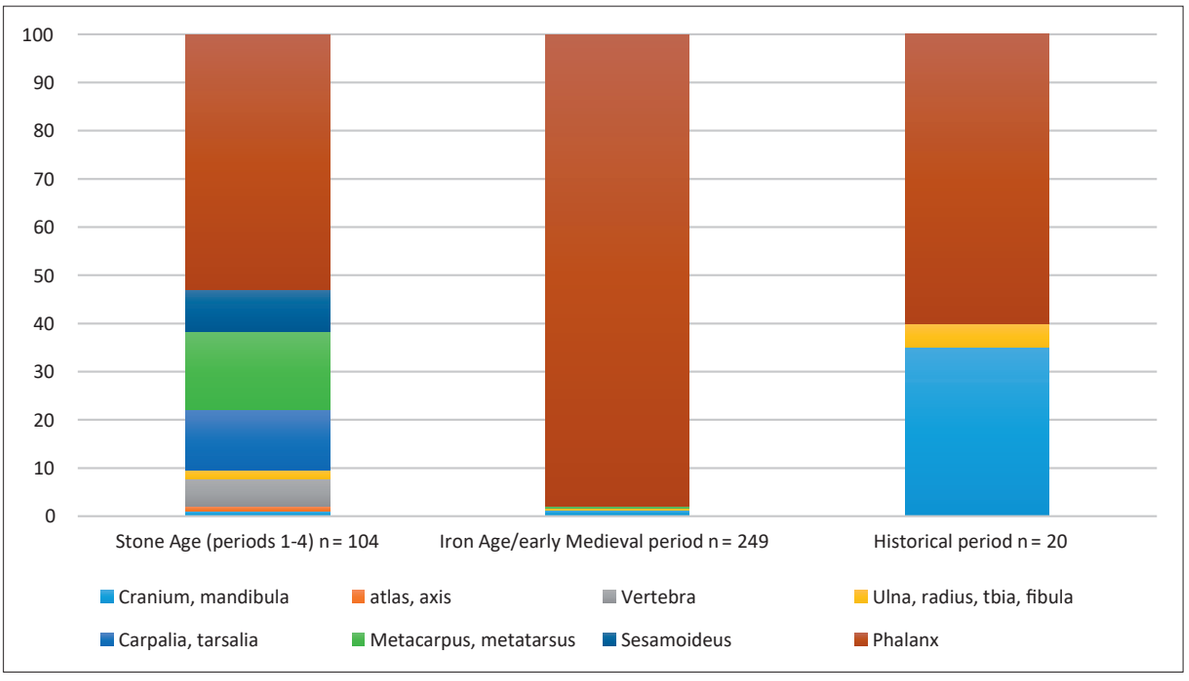


Fig. 5. Anatomical distribution of bear bones (in percentages). The following assemblages have been excluded from this graph: Stone Age – Rautalampi Mäntyranta (no information available about the anatomical element), Iron Age – Hämeenlinna Kalomäki 2, Laitila Rukoushuone, Raisio Pappilanmäki, Turku Ristimäki, Turku Kärsämäki, Uusikaupunki Kalmumäki (total number of identified bear bones unknown).

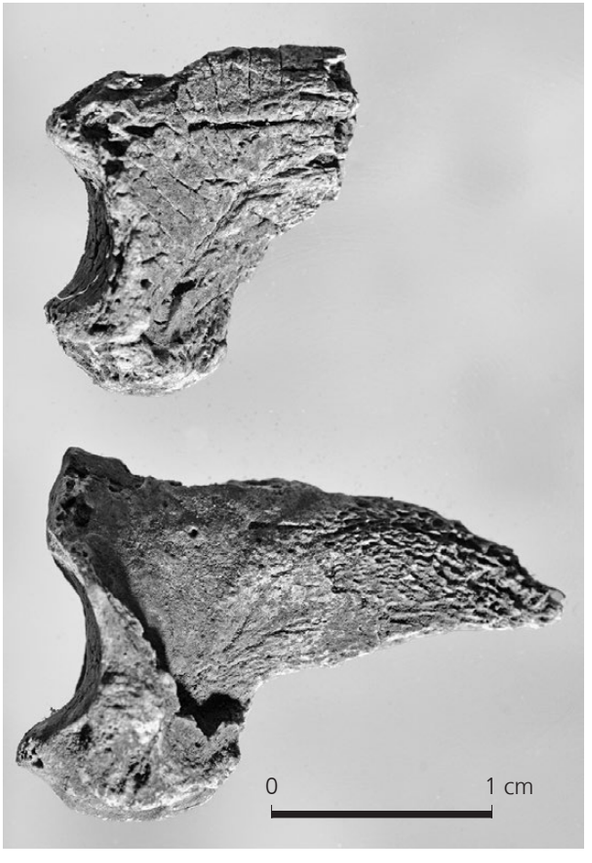


Fig. 6. Burnt third phalanges of a brown bear (photo T. Kirkinen).

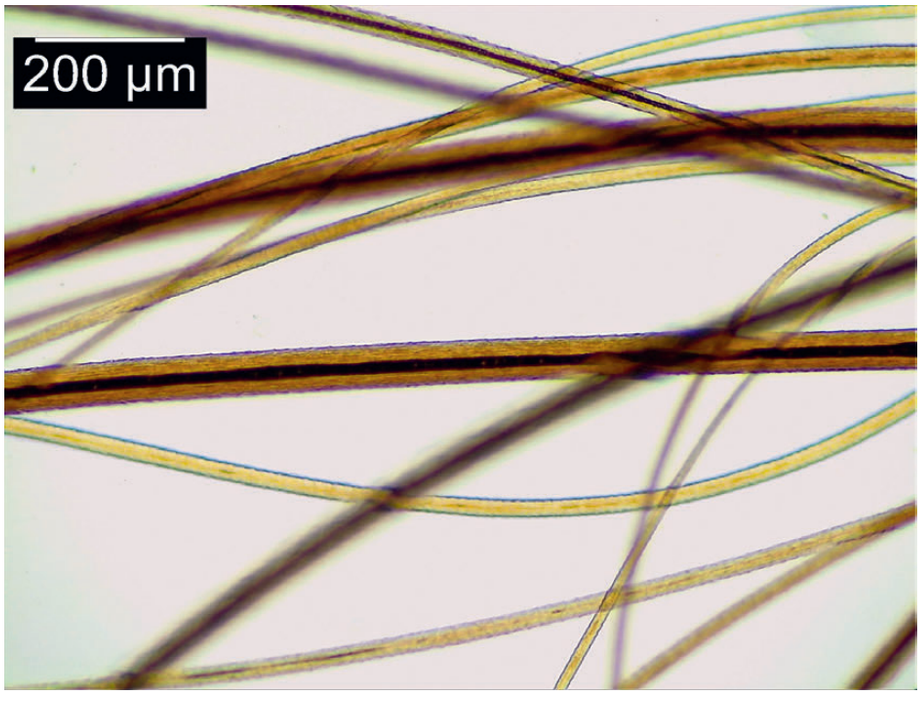


Fig. 7. Bear hairs under light microscope (photo T. Kirkinen).



Fig. 8. A traditional sieppuri, *a short cape made from a brown bear pelt, from the 19th century. Note the bear's nose and eyeholes on the lowest part of the garment (SU4527:33; Finno-Ugric Collection at the National Museum of Finland; photo T. Kirkinen).*

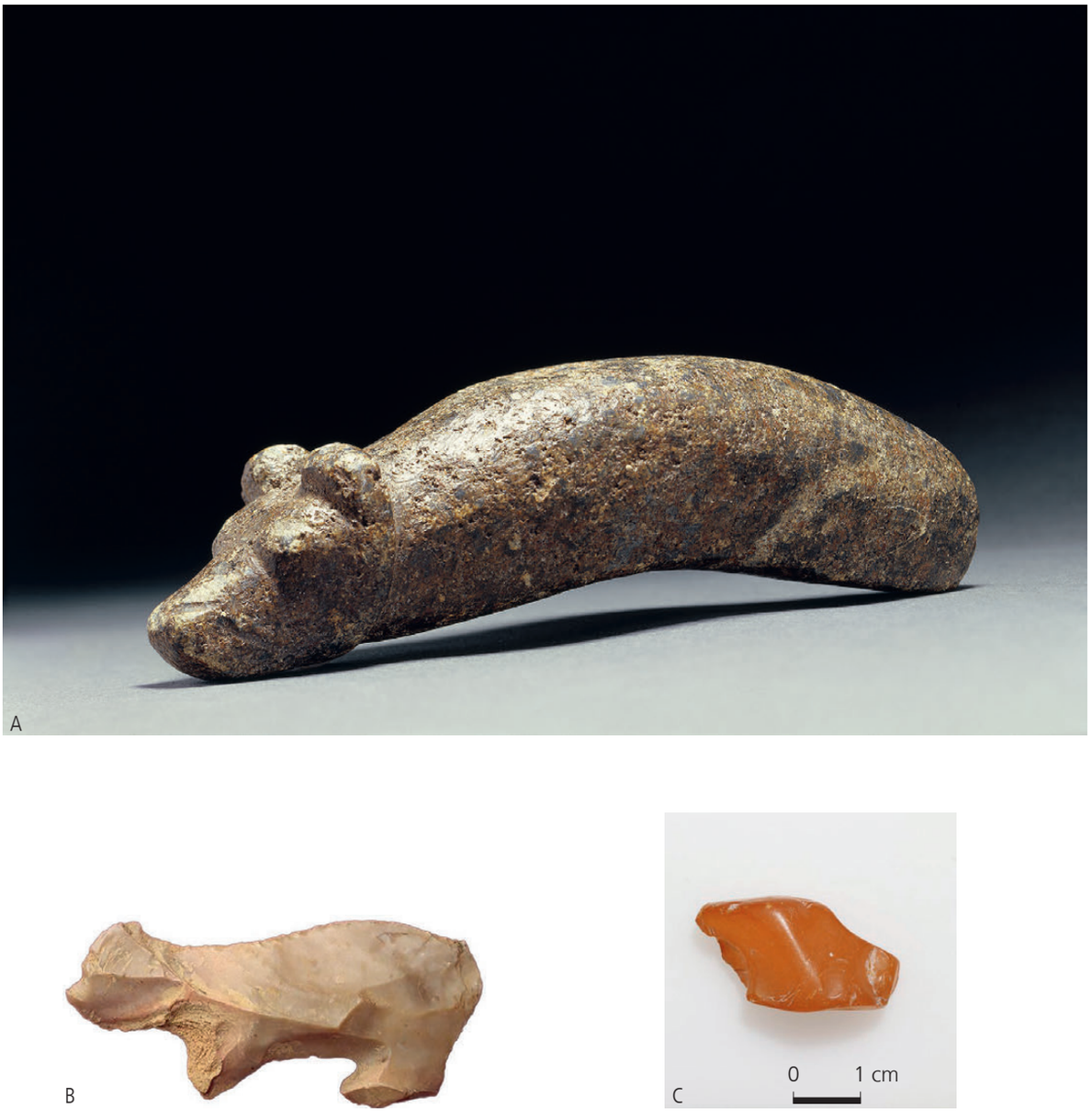


Fig. 9. Bear figurines from Finland. a: Bear-headed stone axe from Paltamo, northern Finland; 191 x 41 x 43 mm (KM 13275:1; National Museum of Finland; photo Finnish Heritage Agency); b: Bear figurine made of flint from Taipalsaari, southeastern Finland. The item dates to the Neolithic; 55 x 24 x 7 mm (KM 31289:584; National Museum of Finland; photo R. Bäckman / Finnish Heritage Agency); c: Possible bear figurine made of amber, dated to the Neolithic. The item was found by divers in front of the famous Astuvansalmi rock painting site, eastern Finland; 34 x 18 x 11 mm (KM 27146:1; National Museum of Finland; photo Finnish Heritage Agency).

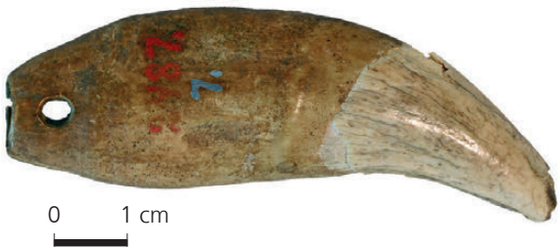


Fig. 10. Bear tooth pendant from the Iron Age Suotniemi inhumation cemetery, Karelian Isthmus, present-day Russia (KM 2487:7; National Museum of Finland; photo T. Kirkinen).



Fig. 11. So-called bear tooth pendants made of bronze from Kalanti, southwestern Finland. The items are dated to the Viking Age (KM 15131:3; National Museum of Finland; photo Finnish Heritage Agency).



Fig. 12. Bear's paw, from Evenks in Northern Asia, 19th– 20th century (Museum of the History of Religion, St. Peterburg, B-114-I). A bear's paw protected people from diseases and misfortunes. Following this belief, Evenks usually hung it above the child's cradle. Sometimes a paw was suspended on a reindeer's neck to guard it from predators (photo Museum of the History of Religion, St Petersburg [Russia]).

Table 1. Archaeological bear bone finds in Finland and on the Karelian Isthmus. See periods in Fig. 2. KM = National Museum of Finland; TYA = Archaeological collections at the University of Turku; TMM = Turku Provincial Museum.

Site	Collection	Cat. no.	Excavator	Excavation year	Osteologist	Burnt/ unburnt	Character of site	Period	NISP	*U. arctos*	*H. sapiens*
Savukoski Malmio 1A	KM	42446	Seppä & Laulumaa	2019	Katariina Nurminen	burnt	occupation	period 1	1	1	
Alajärvi Heikinkangas and Rasi	KM	11895	Luho	1948	Ann Forstén	burnt	occupation	Period 2	18	18	
Askola Pappila Perunamaa Saunapelto	KM	13068	Luho	1952	Jukka Jernvall	burnt	occupation	Period 2	3	1	
Inari Nellimjoen suu S	KM	24376	Sohlström	1988	Stella From	burnt	occupation	Period 2	251	1	
Kokemäki Kraviojankangas	KM	20584	Heikkurinen	1979	Mikael Fortelius	burnt	occupation	Period 2	1,135	1	
Rovaniemi Jokkavaara	KM	26610	Karjalainen	1991	Pirkko Ukkonen	burnt	occupation	Period 2	309	2	
Rovaniemi Jokkavaara	KM	21834	Torvinen	1982	Pirkko Ukkonen	burnt	occupation	Period 2	576	1	
Äänekoski Kapeenkoski	KM	25301	Kankkunen, Halinen	1989	Pirkko Ukkonen	burnt	occupation	Period 2	1	1	
Laukaa Hartikka	KM	23697	Taskinen	1987	Pirkko Ukkonen	burnt	occupation	Period 3	24	1	
Rääkkylä Vihi 1	KM	30460	Pesonen	1997	Pirkko Ukkonen	burnt	occupation	Period 3	384	1	
Vantaa Stenkulla	KM	29954	Katiskoski	1996	Pirkko Ukkonen	burnt	occupation	Period 3	1,691	1	13
Vantaa Maarinkunnas	KM	30464	Leskinen	1997	Niklas Söderholm, Pirkko Ukkonen	burnt	occupation	Period 3	1358	1	25
Enontekiö NE Tunturipolku	KM	28751	Halinen	1993	Pirkko Ukkonen	burnt	occupation	Period 4	233	34	39
Tuusula Kirkkotie	KM	26697	Ruonavaara	1991	Sirpa Nummela	burnt	occupation	Period 4	10	1	
Hartola Uusi-Ruskeala c	KM	37985	Pesonen	2009	Kristiina Mannermaa	unburnt	occupation	Period 6	807	1	0
Hämeenlinna Varikonniemi	KM	23703	Schulz	1987	Jukka Jernvall	unburnt	occupation	Period 6	652	1	3
Mikkeli Valkola	KM	14074	Turunen	1956	Pirkko Ukkonen	unburnt	occupation	Period 6	82	2	0

Cont. Tab. 1. ▶

Cont. Table 1.

Site	Collection	Cat. no.	Excavator	Excavation year	Osteologist	Burnt/ unburnt	Character of site	Period	NISP	*U. arctos*	*H. sapiens*
Raisio Mullin eduspelto	TYA	619, 631, 642, 667	Pietikäinen	1994–1997	Ulla Tupala	unburnt	occupation	Period 6	4,183	3	1
Sysmä Ihananiemi	KM	32291	Poutiainen	2000	Kristiina Mannermaa	unburnt	occupation, cremation?	Period 6	7,32	1	0
Kokemäki Käräjämäki	KM	32705	Taivainen	2001	Kristiina Mannermaa	burnt	cremation	Period 6	104	7	70
Kouvola (Jaala) Pukkisaari	KM	19915, 29097, 30871	Miettinen, Mertanen	1994, 1995, 1996	Kati Salo	burnt	cremation	Period 6	726	13	703
Laihia Mujanvainio (cairn 1b)	KM	10621:18–35	Meinander		Tarja Formisto, Katariina Nurminen	burnt	cremation	Period 6	16	4	523
Laihia Mujanvainio (cairn 3)	KM	10856:12d,18	Meinander		Katariina Nurminen	burnt	cremation	Period 6	2	1	443
Laitila Vainionmäki A		27777			Tarja Formisto	burnt	cremation	Period 6	?	2	
Laitila Vainionmäki A		24389			Tarja Formisto	burnt	cremation	Period 6	?	9	
Laitila Vainionmäki B	KM	34726	Luoto	2004	Kati Salo	burnt	cremation	Period 6	316	1	461
Laitila Kylämäki		?				burnt	cremation	Period 6	?	5	
Laitila Rukoushuone-Kansakoulunmäki		?			Pirjo Lahtiperä	burnt	cremation	Period 6	?	?	
Lempäälä Päiväänniemi	KM	23749	Katiskoski	1987	Tarja Formisto	burnt	cremation	Period 6	1	3	1
Lieto Merola		?			Pirjo Lahtiperä	burnt	cremation	Period 6	?	?	
Mikkeli Latokallio	KM	11070	Sarasmo	1939	Pirkko Ukkonen	burnt	cremation	Period 6	32	2	28
Nastola Skinnari	KM	31607			Tarja Formisto	burnt	cremation	Period 6	?	2	
Käkisalmi Suotniemi	KM	2487:7	Schvindt	1885			inhumation	Period 6		1	
Pirkkala Tursiannotko	KM	39258	Schvindt	2012	Auli Bläuer	unburnt	occupation	Period 6		2–3	

Cont. Tab. 1. ▶

Cont. Table 1.

Site	Collection	Cat. no.	Excavator	Excavation year	Osteologist	Burnt/ unburnt	Character of site	Period	NISP	*U. arctos*	*H. sapiens*
Raisio Siiri 1	TYA	413, 454, 494, 554	Pitkänen, Fagerström, Fagerström & Lehtonen	1987–1990	Anne-Mari Liira	burnt	cremation	Period 6	2,737	60	2,121
Salo (Halikko) Isoriihenmäki	KM	18837	Sarvas	1972	Mikael Fortelius	burnt	cremation	Period 6	44	3	13
Salo (Halikko) Rikalanmäki	TYA	89,105,106	Seppänen	1976–1978	Jan Storå	burnt	cremation	Period 6	368	20	10
Turku Kärsämäki		?				burnt	cremation	Period 6	?	5	
Turku Ristimäki		?			Pirjo Lahtiperä	burnt	cremation	Period 6	?	?	
Uusikaupunki Kalmumäki					Pirjo Lahtiperä	burnt	cremation	Period 6	?	?	
Vaasa (Vähäkyrö) Kaavontönkkä	KM	9520	Hackman	1932	Katariina Nurminen	burnt	cremation	Period 6	11	6	48
Valkeakoski Koirakivi	KM	41247	Moilanen	2017	Anne-Mari Liira	burnt	cremation	Period 6	215	1	15
Vöyri Lågpeltkangas	KM	11295	Tegengren	1941	Tarja Formisto	burnt	cremation	Period 6	?	1	
Vöyri Soldatstomparen	KM	11132	Tegengren	1939	Tarja Formisto	burnt	cremation	Period 6	?	2	
Jämsä Hiidenmäki	KM	33293	Vanhatalo	2002	Niklas Söderholm	burnt	cremation	Period 6	?	14	
Raisio Pappilanmäki		?			Pirjo Lahtiperä	burnt	cremation	Period 6	?	1	
Tampere Vilusenharju	KM	18556			Pirjo Lahtiperä	burnt	cremation, inhumation	Period 6	?	54	
Kaarina Ravattula Ristimäki	TYA	914	Ruohonen	2015	Anne-Mari Liira	unburnt	inhumation	Period 6	4	1	
Vöyri Pörnullbacken	KM	31395	Viklund, Löeffler, Risla	1998	Barbro Hårding	burnt	cemetery-cremation-occupation	Period 6	412	7	340
Vöyri Pörnullbacken	KM	31395	Viklund, Löeffler, Risla	1999	Barbro Hårding	burnt	cemetery-cremation-occupation	Period 6	684	4	542

Cont. Tab. 1. ▶

Cont. Table 1.

Site	Collection	Cat. no.	Excavator	Excavation year	Osteologist	Burnt/ unburnt	Character of site	Period	NISP	*U. arctos*	*H. sapiens*
Hämeenlinna Kalomäki 2		?				burnt	cremation-inhumation-occupation	Period 6	?	?	
Hattula Myllymäki	KM	17291		1967	Björn Kurten	burnt	cremation-occupation	Period 6	?	5	
Hämeenlinna Riihimäki	KM	30304	Seppälä	1997	Niklas Söderholm	burnt	cremation-occupation	Period 6	1,361	2	1,308
Savukoski Mukkala	SU	5187	Leppäaho	1934		unburnt	inhumation	Period 7	?	2	
Tornio keskusta	KM	2002081	Herva	2002	Anna-Kaisa Puputti	unburnt	urban	Period 7	1	10	
Turku Åbo Akademin tontti (Y504)	TMM	21816	Pukkila	1998	Auli Tourunen	unburnt	urban	Period 7	14,935	2	1
Enontekiö Näkkälä	KM	37851	Äikäs	2008	Anna-Kaisa Puputti	unburnt	other	Period 7	50	4	
Kaarina Kuusiston Piispanlinna			Suna	?	Inari Kylänen	unburnt	other	Period 7	?	2	
Kouvola (Valkeala) Käyrälampi	KM	24604	Miettinen	1985	Kristiina Mannermaa	burnt	other	Period 2	73	34	
Kristiinankaupunki Rävåsen	KM	29610	Laulumaa	1996	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–4)	264	1	
Loviisa (Liljendal) Kvarnbacken	KM	9273, 18900, 19152	Äyräpää, Pohjakallio, Pohjakallio	1930, 1972, 1973	Mikael Fortelius	burnt	occupation	Multiperiodic (1–4)	1	2	
Rautalampi Mäntyranta	KM	29442	stray finds		Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–4)	35	1	
Saarijärvi (Summassaari) Moilanen	KM	12234	Luho	1949	Ann Forstén	burnt	occupation	Multiperiodic (1–4)	1	8	
Vantaa Asola	KM	20164	Väkeväinen	1977	Kati Salo	burnt	occupation	Multiperiodic (1–4)	187	1	
Viipuri Häyrynmäki	KM	5620:543	Ailio	1909, 1910	Mikael Fortelius	burnt	occupation	Multiperiodic (1–6)	194	1	
Viipuri Häyrynmäki	KM	5428:611	Soikkeli	1912	Mikael Fortelius	burnt	occupation	Multiperiodic (1–6)	577	1	

Cont. Tab. 1. ▶

Cont. Table 1.

Site	Collection	Cat. no.	Excavator	Excavation year	Osteologist	Burnt/ unburnt	Character of site	Period	NISP	*U. arctos*	*H. sapiens*
Enontekiö Valkea-järvi E	KM	26760	Halinen	1991	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	105	1	
Inari Saamen museo	KM	27808	Seppälä	1993	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	776	9	
Kangasala Pohti-olampi and Tiilite-hdas	KM	32000	Schulz	1999	Kristiina Manner-maa	burnt	occupation	Multiperiodic (1–6)	426	3	
Kangasala Pohtio-lampi ja Tiilitehdas	KM	32554	Schulz	2000	Kristiina Manner-maa	burnt	occupation	Multiperiodic (1–6)	1,51	2	
Kemijärvi Neitilä 4	KM	15671	Sarvas	1962	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	146	2	
Kuhmo Järvelä I	KM	27295	Kontio	1992	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	168	2	
Lahti (Nastola) Kilpisaari 1	KM	32180	Poutiainen	2000	Kristiina Manner-maa	burnt	occupation	Multiperiodic (1–6)	637	3	
Pieksämäki Naara-järvi	KM	22019	Jussila	1983	Mikael Fortelius	burnt	occupation	Multiperiodic (1–6)	128	1	
Pälkäne (Luopioi-nen) Hietaniemi	KM	16822	Miettinen	1965	Anna Pirkkalainen	burnt	occupation	Multiperiodic (1–6)	202	4	
Pälkäne (Luopioi-nen) Hietaniemi	KM	17374	Miettinen	1967	Anna Pirkkalainen	burnt	occupation	Multiperiodic (1–6)	40	4	
Pälkäne (Luopioi-nen) Hietaniemi	KM		Miettinen		Leif Blomqvist	burnt	occupation	Multiperiodic (1–6)	1	3	
Pälkäne (Luopioi-nen) Hietaniemi	KM	17131	Miettinen	1966	Anna Pirkkalainen	burnt	occupation	Multiperiodic (1–6)	80	3	
Riihimäki Sinivuok-koniemi	KM	30884	Matiskainen	1998	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	298	1	
Suomussalmi Kellolaisten tuli	KM	14831	Huurre	1959	Mikael Fortelius	burnt	occupation	Multiperiodic (1–6)	179	1	
Suomussalmi Särkkä	KM	18322	Huurre	1970	Mikael Fortelius	burnt	occupation	Multiperiodic (1–6)	145	1	

Cont. Tab. 1. ▶

Cont. Table 1.

Site	Collection	Cat. no.	Excavator	Excavation year	Osteologist	Burnt/ unburnt	Character of site	Period	NISP	*U. arctos*	*H. sapiens*
Taivalkoski Tervaniemi	KM	28128	Saukkonen	1993	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	106	18	
Taivalkoski Tervaniemi I	KM	28687	Raike	1994	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–6)	8,129	1	
Vantaa Erikas	KM	19430	Sarkki	1974	Kati Salo	burnt	occupation	Multiperiodic (1–6)	54	1	
Saarijärvi Karjalaispirti/Rusavierto	KM	32195	Leskinen	2000	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–7)	3,875	19	
Saarijärvi Karjalaispirtti/Rusavierto	KM	29406	Schulz	1995	Pirkko Ukkonen	burnt	occupation	Multiperiodic (1–7)	683	1	
Saarijärvi Karjalaispirti/Rusavierto	KM	31616	Leskinen	1999	Kristiina Mannermaa	burnt	occupation	Multiperiodic (1–7)	2,685	1	
Saarijärvi Karjalaispirti/Rusavierto	KM	31616	Leskinen	1999	Nina Peltonen	burnt	occupation	Multiperiodic (1–7)	296	1	
Sodankylä Autiokenttä 1	KM	20585	Honkanen	1979	Pirkko Ukkonen	unburnt	occupation	Multiperiodic (1–7)	504	1	
Janakkala Taurula	KM	24745, 26065	Schulz	1989, 1990	Sirpa Nummela	unburnt/ burnt	occupation	Multiperiodic (1–7)	1,304	1	
Pirkkala Tursiannotko	KM	39258	Raninen	2012	Auli Bläuer	unburnt	occupation	Multiperiodic (6–7)	1,424	2	

*Table 2. Radiocarbon dates from archaeological brown bear (*Ursus arctos*) finds in Finland. [1]Ukkonen/Mannermaa 2017; [2]Miettinen 2012; [3] Kirkinen 2017; [4]Mäntylä-Asplund/Storå 2010; [5] Koivisto et al. 2016; [6]Seppä/Laulumaa 2020. KM = National Museum of Finland, Helsinki; TYA = Archaeological collections at the University of Turku. *Calibration: Calib 6.0.1 (Stuiver/Reimer 1993); calibration data IntCal09 (Reimer et al. 2009).*

Site	Collection no.	Date BP	Lab. no.	Date cal BP
Inari Saamen Museo	KM 27808:341	7154 ± 44[1]	Hela-3000	8007–7947
Kouvola Valkeala Käyrämpi	KM 24604	7130 ± 45[2]	Hela-2826	8001–7933
Kemijärvi Neitilä	KM 19671:1084	6963 ± 41[1]	Hela-3121	7843–7732
Mikkeli Tuukkala Valkola	KM 14074		Hela-3587	720–605
Salo Rikala	TYA 105:322	1515 ± 35[4]	Ua-36963	1483–1347
Vaasa Vähäkyrö	KM 9520	1190 ± 30[5]	BETA-358440	1220–1030
Kaavontönkkä			Ua-66392	
Savukoski Sokli Malmio	KM 42446:83	8820 ± 61[6]	Hela-1885	10,167–9667
Enontekiö Näkkälä	KM 3785	830 ± 21[7]		785–691

Table 3. Chronological periods. CW = Comb Ware; Jäkärlä = Jäkärlä Ware; EAW = Early Asbestos Ware; Sär 1 = Säräisniemi 1 Ware; Kierikki = Kierikki Ware; Pyheensilta = Pyheensilta Ware; Pöljä = Pöljä Ware; Jysmä = Jysmä Ware; CorW = Corded Ware; Kiukainen = Kiukainen Ware; Palajguba = Palajguba Ware; ST = Sarsa-Tomitsa Ware; Vardøy = Vardøy Ware; Lovozero = Lovozero Ware; Sär 2 = Säräisniemi 2 Ware; Kjelmøy = Kjelmøy Ware; Luukonsaari = Luukonsaari Ware; Sirnihta = Sirnihta Ware; Anttila = Anttila Ware; Paimio = Paimio Ware; Morby = Morby Ware. Note that in Finnish archaeology the Neolithic Period does not refer to farming but to the appearance of pottery. Agriculture was introduced into Finland and the Baltic area very slowly and mainly towards the end of the Neolithic (e.g. Carpelan 1999; Edgren 1999; Alenius et al. 2013).

Period	Date	Pottery type	Subsistence
7 – Urban Medieval and Historical Period	AD 1500–present	Imported Wares	Agriculture, hunting-fishing-fowling-gathering
6 – Late Iron Age and Early Medieval Period	AD 300–1500	Iron Age Wares; Karelian Ware, Medieval Imported Wares	Agriculture, hunting-fishing-fowling-gathering
5 – Early Metal Period	3750–1700 cal BP	ST, IT (Vardøy), Lovozero, Sär 2 (Kjelmøy, Luukonsaari, Sirnihta, Anttila, Kainuu), Paimio, Morby	Hunting-fishing-fowling-gathering, agriculture
4 – Late Neolithic	5100–3750 cal BP	Pyheensilta, Pöljä, Jysmä, CorW, Kiukainen, Palajguba II, etc.	Hunting-fishing-fowling-gathering, early agriculture
3 – Middle Neolithic	6000–5100 cal BP	CW 2, CW 3, Kierikki	Hunting-fishing-fowling-gathering, (early agriculture)
2 – Litorina Sea stage, Mesolithic & Early Neolithic	8800–6000 cal BP	CW 1:1, CW 1:2, Jäkärlä, EAW, Sär 1	Hunting-fishing-fowling-gathering
1 – Ancylus Lake stage, Mesolithic	11,200–8800 cal BP	No pottery	Hunting-fishing-fowling-gathering

Table 4. Archaeological bear hair finds in Finland and on the Karelian Isthmus (Schwindt 1893; Kirkinen 2015; 2017; 2019a; Kirkinen et al. 2019; Kirkinen et al. 2020a; b). KM = National Museum of Finland; TYA = Archaeological collections at the University of Turku; SU = Finno-Ugric Collection at the National Museum of Finland.

Site	Burial	Date	Collection no.	Function
Eura Luistari	56 (female)	11th century	KM 18000, several subnumbers	garment?
Eura Luistari	95 (female)	9th century	KM 18000: 2075	grave furnishing
Eura Luistari	377 (female)	11th century	KM 18000: 4272, 4273	grave furnishing
Ristimäki Ravattula	4/2014 (female)	13th–14th centuries	TYA 912:523b, 523f	grave furnishing
Ristimäki Ravattula	18/2016 (female)	13th–14th centuries	TYA 993:173	grave furnishing
Kaukola Kekomäki	1 (male and female)	13th century	KM 2489: 4, 6, 14?	grave furnishing
Savukoski Mukkala	III (male)	17th century	SU 5187: 14, 15	grave furnishing

The history of the brown bear (*Ursus arctos* L.) in the northern German lowlands

By Ulrich Schmölcke

Keywords: Archaeozoology, zooarchaeology, human-animal relationship, history of hunting, mammal extinction

Abstract: Brown bears had been widely distributed in the northern German lowlands since the final centuries of the last Ice Age 15,000 years ago and remained part of the fauna until their disappearance over the last two millennia. They became extinct in the northwestern region by the Stone Age, but survived for longer in parts of eastern Germany, where the last individual was killed in the 18th century. It is evident that the meaning and relevance of bears changed a number of times and in fundamental ways. The rarity of bear remains in Mesolithic and Neolithic bone assemblages indicates a lack of human interest in bear hunting, for either spiritual or profane reasons. Later, in the pre-Roman and Roman Iron Age, bears played a role in funeral practices. In those days, bear claws were quite regularly used in burial contexts, and this new role not only had a cultural and religious meaning, but must have created a demand for bear parts and an increased pressure on hunting. In medieval times, bears became extinct in nearly all regions west of the river Elbe, but in the east, which was settled by Slavs c. 1000–1200 CE, bears still occurred. In these regions, bears were a constant, if not common, hunting prey in medieval times. However, also in the regions east of the Elbe, the growing human population density, large-scale habitat loss, massive direct persecution, and finally, the capture of bears for public entertainment, led to the extirpation of the last populations.

Introduction

The brown bear (*Ursus arctos* L.) is a common part of the natural fauna of central Europe, though this is hard to believe for many people today as the species disappeared from most of its regions hundreds of years ago. The history of the European bear, which was intensively analysed during the first decade of the 21st century (summarised by Davison et al. 2011), began during the last glacial period, when bears lived, at least regionally, in subarctic environments north of the Mediterranean (Sommer/Benecke 2005, fig. 1; Edwards et al. 2014). The species' northern central European history began during the final stages of the last Ice Age between 15,000 BCE and 9600 BCE, when brown bears occurred in central Europe in both the colder and warmer phases of the Late Glacial (Sommer/Benecke 2005, fig. 2). The bear's presence in environments that ranged from subarctic to densely wooded areas demonstrates its high level of adaptability to very different ecological conditions; it just needs enough food, such as berries, honey, roots, carrion, fish, or small ruminants (Jakubiec 1993). The hibernation behaviour of bears depends on the availability of food, but females spend the winter

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 265–290 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134337

in self-made dens, where they give birth to two to three cubs, which stay with their mother for two years. Bears are not sexually mature before the age of four to five years.

Less is known about the ecology of the northern German lowland populations of brown bears. Only Schmidt (1856, 15–16) provides some information about the food and behaviour of the last Pomeranian bears. He reports that bears sometimes tried to catch a single prey animal by jumping on its back and biting its neck, but their favourite food were berries followed by pears, grapes, ants, and honey. According to Schmidt, they lived in forests with large, hollow oak trees. This corresponds with modern observations in eastern Europe, where the brown bear also prefers extensive woods with old trees (Jürgenson 1974). However, recent bear populations in Europe are completely restricted to remote areas, whereas archaeological data show them in a great variety of landscape contexts (cf. Kunst/Pacher 2019).

The hunting of bears is widely known to be a highly dangerous and risky undertaking, even if Schmidt (1856, 16), reporting about Pomerania in early modern times, tells us that an attacked bear acts "*tapfer, aber einsichtslos*", meaning "brave but without insight" (cf. Oehrl 2013 for a more general view). As the author explains, their defensive behaviour, their presentation of their own body to the hunter, and their attempts to crush humans instead of biting them, makes it easy and quite safe to shoot bears. In any case, the risk involved in encountering bears in pre-firearm eras is mirrored in their name in the Germanic languages, since the German *Bär*, the English *bear*, the Scandinavian *bjørn* and other similar names have their root in **bher-*, originally meaning just "brown" (Kluge/Von Seebold 2012). Using such an indirect name is common when the actual name of something or somebody is a taboo. By calling bears just "the brown one" people avoided calling up the potentially dangerous animal (Kluge/Von Seebold 2012). In (prehistoric) people's imagination, a bear hearing humans talking about "the brown" would not be interested, whereas it might be by people naming it directly (Schmölcke et al. 2017; see Nedoma and Udolph, this volume).

The main task of the present study is to create an overview of the former appearance of bears in the German lowlands and to investigate changes in the human-bear relationship in the area under consideration through time. Changes and developments in the human perception of the bear are always related to cultural customs and practices, so it makes sense to use a chronological timeline based on the main cultural periods for the diachronic structure. It is clear that such a structure simplifies archaeological insights and units, but it is also suitable in the context of the questions to be answered here. Thus, the postglacial period will be divided into the following stages, each of which will be analysed and discussed separately: Mesolithic (9600–4000 BCE), Neolithic (4000–1800 BCE), Bronze Age (1800–500 BCE), Pre-Roman Iron Age (500–1 BCE), Roman Iron Age (0–500 CE), Early Medieval period (500–1050 CE), Late Medieval period (1000–1500 CE), and early modern times (1500–1750 CE). Even if the cultural development was relatively uniform and synchronous in the investigated area, sometimes there are strong discrepancies (e.g. the Neolithic began much earlier in the Brandenburg area than in Schleswig-Holstein). In such cases, the cultural stage has priority over the chronology.

Data background and first amazing outcomes

The archaeozoological data for this study are gathered from the huge data collection "The Holocene History of the European Vertebrate Fauna", which was built up under the leadership of Angela von den Driesch (Ludwig Maximilians University, Munich), Norbert Benecke (German Archaeological Institute, Berlin), and Dirk Heinrich (Christian Albrechts University, Kiel) in the 1990s (Heinrich et al. 2016). With respect to northern Germany – defined here as part of the central European plain north of 52°N and between the modern borders of the Netherlands and Poland (Fig. 1) – the data collection lists 429 archaeological sites with altogether more than one million animal remains (= NISP =

Number of Identified Specimens) dating from the Late Glacial to early modern times. Seventy sites comprise remains of brown bear; the total number of bear remains is 557, these are 0.7 % of the remains of wild animals – and 0.06 % including remains from domesticated ones. Excluding sites with unclear or period-overlapping dating (such as "from 10th to 18th centuries"), reduces the number of irrelevant sites and records, and the remaining number is both statistically significant and meaningful (Table 1). This remains true even if the find list is incomplete, because it only sporadically comprises the results of excavations published after 2000.

The hunting of wild mammals did not always have the same degree of importance in the past. It is possible to measure the relevance of a specific hunted species by comparing its relative proportions in an archaeozoological assemblage with the relative proportions of other hunted species. If the proportion of a species is high, it is likely that the hunting of it played a considerable role for the local human group. Naturally, during the Late Glacial and the Mesolithic, when human meat demand was satisfied nearly exclusively by the exploitation of wild animal resources – the dog was only sporadically eaten (Ewersen/Schmölcke 2013) – the proportion of wild species' remains in the excavated bone assemblages reaches maximum values of near 100 % (Table 1). Hunting was often still important during the Neolithic, though with a successively declining tendency. Later on, the exploitation of wild animals lost its significance, and, between the Bronze Age and early modern times, only 1–6 % of archaeological animal remains derive from wild species.

As we will see, the persecution of bears also did not always have the same relevance in the past. A first overview of the data shows that, from a quantitative point of view, bears were never important. In most historical periods, their remains constitute around 0.5 % of hunted wild animals, with the exception of the Roman Iron Age, during which they constitute about 3 % (Table 1). Red deer, roe deer, and wild boar were quantitatively always much more relevant. There is, however, one extraordinary divergence from this, when during the pre-Roman Iron Age nearly half of all identified remains from wild mammals derive from brown bears! In the paragraph about the Iron Age, some pages below, this astonishing phenomenon will be discussed and explained. At this point, it should just be remembered that comparisons between proportions of different animal species at different sites are no simple undertaking at all. Among many other factors, social and ecological circumstances as well as site-functional aspects must be considered, and sometimes it requires background information, ranging from species behaviour to excavation technique (cf. Kunst 2014).

Next to species proportions, constancy is a valuable measurement used in this paper. Constancy means the percentage presence of e.g. brown bear remains in a number of sites or periods (Schmölcke 2003; 2013). The absolute number of individual specimens from bears at one of the sites (or periods) is not important, and herein constancy has some similarity to the biogeographical concept of nestedness (Ulrich et al. 2009). Constancy just compares the presence or absence of a species. Comparisons of the constancy of bear records at all excavated archaeological sites with animal remains in the area of interest show that bears are found at between 9 and 35 % of postglacial sites, depending on their dating (Table 1). The medium constancy is 17 %, which means that statistically, in northern Germany, six archaeological sites need to be excavated in order to find at least one single part of a bear! It is remarkable that this value does not differ very much from the Mesolithic to the Early Medieval period. Only the Bronze Age with its lower values and the Iron Age and Late Medieval eras with their higher values show greater differences. It will be one of the tasks of the present paper to find and discuss possible reasons for this distinctive picture.

The database used for this study comprises all kinds of archaeological features, from settlements to single animal skeletons to human burials. Even if it makes less sense, when addressing many of the research questions, to compare results from large medieval settlement excavations with those from single Iron Age grave pits, I have decided to do so in the present paper – at least in the tables. The main reason for this is that a differentiation between temporal, spatial, or functional categories

that are too different reduces both the statistical testimony and the clarity of main developments concerning the human-bear relationship. In the present text, differentiations with respect to different functional feature groups will be made and discussed if necessary.

Prior to historic times, there are no written sources, and it is difficult to reconstruct the human perception of the largest central European predator and the general relationship between bear and human. Working with archaeozoological data means always to take into account that the approach to reconstructing the former distribution of a species will necessarily be related to, and influenced by, former human settlement patterns and archaeological research activities. Thus, the additional consideration of data from other scientific disciplines is important. Besides archaeological remains, it is also necessary to include other historical sources such as written testimonies, pictures, and even memorials. Only with the existence of such sources, alongside the archaeological ones, will our knowledge about the deep-rooted nature of human-bear relationships find a stable basis. In the area of interest, these kinds of sources are available only from *c.* 1000 CE onward, i.e. with the beginning of the Late Medieval period. A scientific study of bears that systematically investigates and analyses non-archaeological sources has, up to now, been published only for the area previously known as the German Democratic Republic (Butzeck et al. 1988; a related approach is used by Oehrl 2013). As it includes some regions that are also relevant for the present article, this study is an unprecedented and indispensable addition to the archaeozoological data.

Brown bears in the German lowlands during the Mesolithic

At the end of the last glacial period, when the climate began to warm up and the first forests began to cover the region we are studying, the brown bear became a widely occurring animal (Sommer/Benecke 2005). Due to sharing the whole area of their habitat with Mesolithic hunter-fisher-gatherer communities, bears were a potential prey of human hunters. It is remarkable that, during the only postglacial period when human life was based exclusively on the exploitation of natural resources, the relative NISP of bear remains reaches, with less than 0.3 % of the wild mammal remains, its minimum value (Table 1). To make it clearer: Arithmetically, you need to identify more than 300 Mesolithic animal bones to find a bear! Thus, bear bones are a rarity in Mesolithic faunal assemblages – not only in our area of interest but e.g. also in Austria, where they are completely lacking during the Mesolithic (Kunst/Pacher 2019). Even at the archaeological sites of Tribsees, Hohen Viecheln, and Friesack, which have yielded the highest number of bear remains (for locations see Fig. 1), they reach only between 0.3 and 0.7 % of the wild animal NISP, and often sites with numerous identified animal remains yield only few, if any, bear bones (Table 2). Late Mesolithic occupation sites such as Rüde in Schleswig, Rosenhof in Holstein, Timmendorf-Nordmole I in Mecklenburg, and Lietzow-Buddelin in western Pomerania (all dated to the 5th millennium BCE) are examples for this observation. They also indicate that bears were less frequent, if not absent, in coastal areas, probably because the landscape there, structured by the sea with bights, bays, and bogs, did not allow for the existence of extensive woods, the bear's optimal habitat (cf. Aaris-Sørensen 2009 for Denmark).

The data indicate that bears were equally distributed throughout the Mesolithic "natural landscape"– the small groups of Mesolithic hunter-gatherers influenced ecological processes only locally and did not cause permanent environmental changes (Gross et al. 2019) –, but show regional preferences due to ecological, namely vegetation conditions. Bearing in mind that many excavations have been carried out in coastal areas with their excellent preservation conditions, the constancy of bear records at Mesolithic sites seems to be relatively high: 14 %, which is not far away from the values of later epochs. This figure does not mirror an economic importance – which did not exist at all –, but shows a wide range of the species outside the coastal region.

Since the remains, not only of bears but also of other Carnivoria, are found only rarely at northern central European Mesolithic sites and with only few bones per site (Charles 1997; Schmölcke/Nikulina 2022), such species were obviously not a regular hunting prey. Even the fact that artificially perforated bear canines have been repeatedly found, is not contradictory. They were just part of the general and common practice of using the teeth of large animals as clothing accessories (Gramsch 2012). It is possible that, during the Mesolithic, humans and bears avoided direct contact with each other, which will have been relatively easy due to the small population densities of both. Comparisons with modern hunter-gatherers show that it is likely that spiritual reasons might also have forbidden the persecution of bears. Many native peoples of northern Eurasia and America have admired the brown bear as a kind of mediator between animals and humans up to modern times, and for that reason they normally did not kill it (Hallowell 1926). Often, the killing of a bear was only allowed involving the performance of strict and complex rituals before and after the hunt (Duerr 2010, 76–79). Such bear ceremonialism is typical in nearly all wooded parts of the northern hemisphere, and bears were always considered to be "kings of the forest", a holy animal, or, as said before, a kind of mediator between animals and humans (Hallowell 1926; Pastoureau 2007; Pentikäinen 2007).

An archaeozoological analysis of carcass treatment is not possible due to the low number of bear bones per site. Friesack 4 (NISP 9) and the Polish site of Dąbki (NISP 15) indicate that if bears were hunted during the Mesolithic, then, at least sometimes, only selected parts of the animals were transported back to the settlement. At Friesack 4, only metapodials, phalanges, and fragments of bear pelvis have been recorded (Schmölcke 2019), whereas at Dąbki, apart from a shoulder blade and a rib, all other bear finds are remains from the paw (Schmölcke/Nikulina 2015). Such representation patterns indicate that two kinds of bones were taken to the settlements – those that remained in the pelt after skinning (phalanges and metapodials), and those representing parts of the body with the best meat quality. Obviously, the Mesolithic foragers consumed most parts of the bear at the kill site and took only the pelt and selected parts of the bear's body back to their base camp. Such a special treatment of the animal characterises the bear as a very particular hunting object (Schmölcke et al. 2017).

Brown bears in the German lowlands during the Neolithic

Especially during the Early Neolithic, animal remains from archaeological sites are proof of a mixed economy (Hartz/Schmölcke 2013; Schmölcke in press). Although the subsistence of the people was now based mainly on domesticated animals, hunting was still an important part of the subsistence economy. Summarising the whole Neolithic era in the area of interest, the remains of wild mammals comprise more than 40 % of all animal bones (Table 1). In Neolithic assemblages, bear remains occur only sporadically; within the remains of wild animal species, they reach a proportion of less than 0.6 %, and, arithmetically, only every seventh excavated site yields at least one bear part (constancy 16 %). The maximum values for bears among the wild species were never higher than 1.9 % (Waren-Stinthorst) and 1.7 % (Hüde I); it has more often been the case that some single finds yielded amounts of less than 1 % (Table 3). The game-rich assemblage from Hüde I, which dates to about 2800 BCE, provides the largest number of bear remains out of all the sites considered (NISP 145) and can be of high importance for our knowledge of Neolithic bear hunting methods, carcass treatment, and bone modifications. Hüde I is the only site that offers the possibility of significant analyses concerning age structure, skeletal part representation, and cut marks. Unfortunately, the published analyses are not, as yet, very detailed (Hübner et al. 1988, 54–55). They show that all bear remains derive from relatively large adult animals and that, as seen at some Mesolithic sites, two parts of the skeleton dominate the material by far, namely the paws with metapodials and phalanges (43 % of the

finds in Hüde I) and the head with cranium, mandibles and teeth (30 %). This is a remarkable difference to all the other animal species at Hüde I. An explanation for this unequal distribution of the different skeletal parts is that often only parts of the carcass reached the human settlement, in particular those parts correlated to pelts or those suitable for the fabrication of tooth pendants. The authors of the Hüde I study mention furthermore the high degree of fragmentation of postcranial bear remains but provide no details (Hübner et al. 1988, 41). At another site, Wolkenwehe-Heidmoor, which was repeatedly occupied in the 4th millennium BCE, Ewersen (2007, 86) found clear cut marks on all eight limb bones and vertebrae, and interprets them as being the result of decapitation, skinning, systematised disarticulation, and the consumption of bear meat. In one case, chop marks show the intention of removing the claw from the rest of the paw. Together, Heidmoor and Hüde I demonstrate the intensive exploitation of bear carcasses.

The quantity and constancy of bear remains from the Neolithic are low, but the proportion of bear within the hunted animals increases compared to the Mesolithic. Certainly, the high number of finds in Hüde I influence the values positively, but an increasing number of records and amounts can also be found for other large predator species (Schmölcke/Nikulina 2022). In the northern German lowlands, wolves, lynxes, wild cats, and bears seem then to have become a slightly more common object of hunting than before, and in the Netherlands this development is even more evident (Kuijper et al. 2016, tab. 2). Certainly, the number of records is still low, but the data might indicate a change in the overall tradition of, and motivation for, hunting. Thanks to the presence and breeding of livestock, the exploitation of wild animals was no longer the only human meat resource, and it is therefore likely that new, alternative motives and reasons for hunting developed. One new key reason for hunting was surely to guard livestock from predators and the crops from herbivores. Even if there is no archaeological indication of whether the meaning of the bear changed for the people, it cannot be ruled out that bears also achieved a new status in religious, symbolic, and ideological systems (Boyle 2006; Hartz/Schmölcke 2013).

Even if the killing of bears was potentially slightly more common during the Neolithic than during the Mesolithic, in the archaeozoological data there is no evidence that the Neolithic farmers influenced the general occurrence and distribution of the bear (Sommer/Benecke 2005). In addition, there is also no indication of a purposeful reduction of bear populations. Only from Denmark had brown bears obviously already disappeared, at the latest during the Neolithic (Aaris-Sørensen 2009). Since there is no evidence at all in Danish archaeozoological records for an intensive persecution previous to the species' disappearance, the reasons it vanished are likely to have been the special spatial preconditions: Due to the worldwide sea-level rise, Denmark was divided into islands and the Jutland Peninsula during the Mesolithic between 7000 and 6000 BCE, and this might have affected local bear populations negatively by reducing suitable habitats. Certainly, the vulnerability of the bear population was increased by the fragmentation of its habitat.

Apart from Denmark, the range of bears in northern central Europe was, at the end of the Neolithic, generally similar to that of Mesolithic times. But this is probably no longer the case when we go more into regional details. It cannot be excluded that the Mid-Holocene warming period, with its maximum between 5000 to 3000 BCE, reduced the reproductive rate of the species and caused population declines. Bears consume more energy resources in warm winters, because they wake up more often and go in search of food. As a result, less energy is available for caring for new-borns, which reduces the number of offspring that survive to maturity (Albrecht et al. 2017). This might be particularly the case in regions or periods where the warming was greater in winter than in summer. A long series of mild or even very mild winters without any phases of frost characterises, for example, the climate in northern Germany between 3800 and 3300 BCE (Feeser/Dörfler 2015; Czymzik et al. 2016). One consequence of such a series of warm winters was potentially a decreasing reproduction success in bears, but the mild winter climate also caused a large rise in human popula-

tion density (Hinz et al. 2012) – again with negative consequences for the bear by habitat limitation and by the rising need for hunting in order to protect livestock. Therefore, it can be expected that, at least in the favourite regions of Neolithic farmers, a decline in the bear populations took place. The archaeozoological data, however, do not allow at present to reconstruct such range dynamics of bears on a local or regional level.

For the first time in the area under consideration, depositions of burned distal phalanges (claws) of bear are recorded in some human graves during the Neolithic. One complex of cremation burials at Westerhammrich (East Frisia), dated to about 2800 BCE, is known; here in four different graves between one and five bear claws with traces of burning have been found (Bärenfänger 2009). We can understand them as the remains of bear skins with third phalanges still attached, which were burnt together with the deceased during cremation ceremonies, or as *pars pro toto* for bear skins. At present it remains open as to whether this was only a local tradition.

Impressive and significant examples of pendants made of bear teeth came to light in the flat grave cemetery of Ostorf (Mecklenburg), dating to around 3200 BCE, where necklaces have been found combining hundreds of single bear teeth, and also the teeth of many other animal species, in several human graves (Lehmkuhl 2007). These finds prove again the practice of bear hunting and the use of bear parts as clothing accessories, but they might also indicate that bears started to play a role in funeral traditions. At present, however, it is impossible to assess if this was a common practice. Perforated canine teeth from Neolithic settlement contexts were excavated at the site of Oldenburg LA 232, which was occupied around 3000 BCE (Fig. 2; Brozio et al. 2018), and Wolkenwehe-Heidmoor (Ewersen 2007, fig. 47). At Heidmoor, a perforated second metatarsal was found (Lehmkuhl 1986).

Brown bears in the German lowlands during the Bronze Age

The Bronze Age in the northern German lowlands shows phases of economic boom and bust, and it is the same for human population density and size. Generally, the exploitation of nature by humans and the anthropogenic changes to the landscape were much more intensive than in the previous Neolithic era (Kneisel et al. 2019). However, since settlements were now often established in areas unfavourable for the preservation of bones (e.g. on sandy hills), archaeozoological statements about the distribution and meaning of the bear in the Bronze Age are extremely limited. It is not only the number of available archaeological sites that decreases drastically compared to the Neolithic – from 80 to 11 sites containing wild species –, but the number of wild animal remains drops by 87 % to a NISP of only 284 (Table 1). Only 5 % of all excavated animal remains now derive from wild species; obviously hunting no longer had any economic, and probably no social, relevance.

Under these circumstances, it is not surprising that Bronze Age bear remains are nearly completely lacking. There is just a single grave from the Middle Bronze Age (1500–1250 BCE in the area of concern) excavated at Nützen, where, next to other unburned grave goods, a burned bear distal phalanx has been found (Schmid 1981). Up to now, this seems to be the only record of bears in the area of interest. It remains speculative whether the local, quite intensive anthropogenic deforestation during the Bronze Age at least in some regions caused a reduction or even the extinction of bear populations. But even if this was the case, the brown bear is an adaptable species, and if the habitat destruction was only temporary and not combined with active and intensive persecution, bears should have been able to re-colonise lost ranges. It is likely that only in centres of human population the bear population was already significantly lower compared to that of the Mesolithic.

From the pre-Roman Iron Age to the Early Medieval period, altogether 20 cremation burials in the area of investigation include single or several bear claws. As we have seen, this tradition was already rooted in the Neolithic, but as a common concept it started about 200 BCE (cf. the discussion in Schönfelder 1994, 220) and was widely distributed some generations later in the period between 100 BCE to 50 CE (Table 4; cf. Beermann 2016). In the area of interest, 110 bear claws have been excavated from 14 Iron Age graves at nine sites; the number per burial ranges from one to 15 (Table 4). The geographical distribution of the sites shows them spreading from Lower Saxony to Brandenburg, and in the north to Holstein, but there is also a striking cluster in the Lower Elbe area, surrounded by the burial grounds of Alt Mölln, Ehestorf, Ehestorf-Vahrendorf, Harsefeld, and Putensen (cf. Fig. 1, nos. 1, 18, 31, 52).

Whether it was the burning of bear skins or the alternative use of single claws as *pars pro toto,* as a common tradition the ritual of using bear claws seems to represent a complete change in the human-bear-reception. It is likely that the area of interest was at least influenced by the various circumpolar bear cult ceremonies distributed throughout all the wooded regions in the northern hemisphere. Despite all the differences between regions, times, cultures, and peoples, the general concept of these ceremonies is the perceived role of the bear as a kind of special mediator between nature and humans (Hallowell 1926). In contrast to those eras in which the killing of the "king of the forest" was strictly ritualised, in the Iron Age it must have become a more frequent undertaking. As opposed to earlier periods, a demand now developed for ursine burial equipment. It seems to be realistic but speculative that this went hand in hand with new initiation rituals, in which a young man had to kill a boar or a bear in order to be admitted to the adult community (Oehrl 2013, with examples). It is, in any case, an indication of a complete change in human-bear relationships that the brown bear is, in the northern German Iron Age, represented exclusively through canines and distal phalanges in human burial contexts. This means there is a total lack of bear remains in profane occupation waste deposits at settlements (Table 5) – as is also known to be the case in the northern French Iron Age (Méniel 2001). It is, however, hard to say if the total lack of bear remains at Iron Age settlements may be the result of a spiritual taboo, which decreed that bear carcasses should not be taken into inhabited areas but only to burial grounds. However, the reasons can also have been more technical: Hunting generally played a minor role in Iron Age subsistence and therefore there are, at best, small quantities of wild mammal remains at every excavated site, with wild mammal remains even missing sometimes (Table 5). In total, the proportion of wild animal remains at Iron Age archaeological sites is only 1.2 %, reaching its all-time minimum (cf. Table 1). Under such circumstances, it is far more likely that species with both economic value and high population density would be recorded, such as deer species or wild boar, than species with limited economical value and low population density, such as bear or carnivores. Therefore, it is, from a statistical point of view, rather optimistic to expect to find bear remains in occupation waste deposits of sites with wild mammal remains that total only 1 % or less.

Coming back to funeral practices, Iron Age burials containing bear remains could be female or male, rich or poor. The number of claws differs and ranges from one to fifteen, but is of course dependent on the excavation method used and the local preservation conditions. This is one reason why it is not always certain whether the distal phalanges were originally part of a skin. In any case, the fact that the burial context creates an association with the spiritual or magical qualities bestowed by Europe's strongest animal is obvious, and a potential decorative function of the claws is also undeniable (Schmölcke et al. 2017, 904–905). Context studies demonstrate that during the Iron Age, bear claws as burial goods were part of a widespread pattern of beliefs (Schönfelder 1994; Kivisalo 2008; Grimm 2013; Oehrl 2013; Beermann 2016; Lindholm/Ljungkvist 2016; Kirkinen 2017).

The variety of social positions might indicate that bear remains as grave goods were connected more to personal virtue or prestige of the deceased than to her or his role or function in society (Schönfelder 1994). Since bears were seen as a Germanic prestige item, we can assume that they were not hunted in the Iron Age as a regular prey but because of their value and significance, and after they had been killed they appeared as a meaningful grave offering (Schönfelder 1994).

Due to all these circumstances it is impossible to obtain information about potential changes in the bear's distribution during the Iron Age. We can suspect that a human-driven landscape change by an agriculture more intensive than ever before (cf. Behre 2008), together with a still-increasing deforestation, reduced suitable habitats and caused an ongoing fragmentation of the population. However, the exact degree of habitat fragmentation and the question of how much population density and the number of individual animals decreased remain open.

Brown bears in the German lowlands during the Roman Iron Age

Burials furnished with bear claws as part of the remains of a skin or as single grave goods date back to the pre-Roman part of the Iron Age, but, at least in Scandinavia, this tradition reached its heyday with hundreds of examples in the period from the late Roman Iron Age to the beginning of the Early Medieval period, i.e. the time frame between the 3rd to the 6th centuries CE (Grimm 2013; Lindholm/Ljungkvist 2016). Detailed studies from Sweden have shown that the human exploitation of bears in the Iron Age resulted in a considerable decrease in certain populations and even local extinctions (Lindholm/Ljungkvist 2016). There is a long, intensive, ongoing discussion about the remains of bears, in particular claws, in northern Germanic graves. They might be understood as the remains of a fur as a noble bedding or wrapping for the deceased, as spiritual items, luxury goods, objects of prestige, insignia of a hero or a berserk, or hunting trophies (cf. Oehrl 2013; Kirkinen 2017, for references and discussion). In the area discussed in the present paper, however, such features are scarce during this period and are known from only three locations (Table 6). The finds from Süderbrarup still belong to southern Scandinavia, and two other sites with bear phalanges in burial contexts further south in Mecklenburg (Parum) and in the Börde district in Saxony-Anhalt (Haldensleben) point to a larger, but not common, distribution of this custom in the central European lowlands.

We can surmise that the hunting of wild animals was of minor interest in the daily life of humans during the Roman Iron Age, even though the state of research might be insufficient to prove this, since in northern central Europe only relatively few Roman Period sites have yielded animal bones (Schönfelder 1994, tab. 2; Schmölcke/Breede 2011). Altogether, the proportion of wild species reaches only 1.3 % of the excavated animal remains from this period; this is the same proportion as in the previous pre-Roman Iron Age (cf. Table 1). Red deer (*Cervus elaphus*) was the only species of economic relevance, but it is remarkable that, after roe deer (*Capreolus capreolus*) and wild boar (*Sus scrofa*), the brown bear is relatively common, reaching about 3 % of all wild mammal remains. This is its all-time maximum, which is based, however, upon just 34 remains from funeral contexts. When claws from the burials are excluded, the proportion decreases to less than 1 %. The latter value is much more realistic, since the constancy of bear records is only 13 %, a very low rating, which shows that bear hunting was definitively not common. This applies especially to the western half of the investigated area, whereas bear records are more common east of the river Elbe (Schmölcke/Breede 2011). The bear remains excavated in the eastern region indicate that quite probably the carcasses of bears were taken to the settlements (Fig. 3). It remains open as to whether the relative frequency of the species in archaeological settlement assemblages is connected with initiation rituals (Ranke 1976; cf. Oehrl 2013) or with the protection of livestock (Teichert 1973).

As for the pre-Roman Iron Age, conclusions about the range of bears in the central European lowlands during the Roman Iron Age are difficult. It is, however, remarkable that all seven records from the period in question originate east of a line from Süderbrarup – Hildesheim (Tables 6–7, plus the site in Magdeburg-Cracau). Does such a distribution of records mean that bears were already extinct in most regions west of the river Elbe during the Roman Iron Age? As we will see below, the answer is "probably yes".

Brown bears in the German lowlands during medieval times

The medieval period on the northern German plain must be divided into two main stages: first, the time from the end of the Roman Iron Age to about 1000 CE; second, the period between about 1000 and 1500 CE. Generally speaking, the first period of time, labelled here Early Medieval, is characterised in the area of interest by a neighborhood of different peoples with clearly distinct traditions and cultures. Most relevant in the present context are the Franks and Saxons living more or less to the west of the river Elbe, and the Slavs to the east of it. In the second period, the Late Medieval, culture and lifestyle are much more uniform in the area of investigation.

The Early Medieval period

Concerning the distribution of bear remains during the Early Medieval we find a clear distinction in the northern German plain between the areas of different cultures (Müller 2013). Whereas in the area of the Danish people in the north and the area of the Franks and Saxons in the west, only one single site (Haithabu) has yielded bear bones, there are 13 records in the area of the Slavs east of the Limes Saxoniae and the river Elbe (Fig. 4). The constancy differs between 2 % in the west (total number of excavated sites n = 41) and 30 % in the east (n = 43 sites). Either brown bears had already disappeared from the whole western part of our area of investigation, or the hunting of bears had a special meaning for the Slavs. Certainly, both can be true. A constancy of 33 % is the highest value found in the present study of settlements of a special period or region, and this value alone indicates a special social context of the bear or a special function of bear hunting. The causes of such regular bear hunting in a society can range from livestock protection to different kinds of rituals. Until today, it has not been possible to illuminate the backgrounds of the phenomenon but, since the bear remains derive exclusively from settlement contexts, there is at least no evidence for the importance of the bear in funeral practices.

Apart from differences between cultural groups, it appears more pronounced in the Early Medieval era than in previous periods that high bear proportions among wild species are not linked to high values for game in general, but correlate to the settlement's function. It is highly remarkable that large excavations of Early Medieval trading and market sites often yield tens or even hundreds of thousands of animal remains, but not a single record of a bear. The archaeozoological assemblages of such sites regularly yield, almost exclusively, the remains of domestic animals and only an extraordinarily small amount of wild species. Examples of trading sites with huge amounts of bones but less game are Menzlin with 0.2 % remains of wild animals (Benecke 1988), Groß Strömkendorf with 0.4 % (Schmölcke 2004), and Elisenhof with 0.9 % (Reichstein 1994). Commonly, red deer, roe deer, and hare (*Lepus europaeus*) are found, but bear remains are lacking. In the dataset used, there are only eleven Early Medieval excavations that yield a minimum of 200 remains of wild species and, at these sites, bears reach maximum proportions at Groß Raden (1.7 %), Starigard/Oldenburg (2.2 %), and Mecklenburg (2.6 %). These sites were among the most important Slavonic fortifications in those days, which at the same time served as noble's seats, and this applies also for most of the other sites mentioned in Table 8.

Within the time span stretching from the late 5th to the 7th centuries, a new tradition of human burials with bear-related furnishings reached parts of central Europe, but now they were different in their meaning compared to earlier periods (Beermann 2016; Grimm 2013, and references therein). However, this new tradition affected only western and southern central Germany (Grimm 2013, 290), and in the area of interest there is only the burial site at Liebenau, which yielded records of bear distal phalanges in five cases (Table 9). As is characteristic for the Merovingian region, these bear remains were deposited exclusively in female burials. Potentially, their purpose served a wide range of uses from decoration to hunting skills, from magic to healing (summarised by Kivisalo 2008, 273–274).

Late Medieval and early modern times

At the beginning of the Late Medieval era, bears had survived only in the former Slavonic area, which was subsequently conquered from the west, though the constancy of bear records reaches its second maximum value during the Late Medieval period! While in archaeological bone assemblages from Early Medieval times, bear remains are found at only 18 % of the sites in the German lowlands, this value increased to 23 % during the Late Medieval period (cf. Table 1). The fact that bear remains have been recorded at every fourth Late Medieval site is especially remarkable, when we take into account that in those days the original range of the brown bear in central Europe had already been massively reduced. This means that, during the Late Medieval period, for the first time the location of archaeological bear records does not correspond with the areas inhabited by wild bears. Probably the high constancy reflects two very different matters at the same time; namely, a high persecution level of the last remaining bears east of the Elbe river, as well as the presentation of captured bears as attractions in towns. It is, of course, not apparent in every single case whether an archaeological bear bone from an urban context is from such a "dancing bear", but the number of urban bear records alone makes this conclusion likely. In total, more than half of all Late Medieval records (10 of 19) derive from a clearly urban context.

At the same time, the number and frequency of bear remains are low at nearly all archaeological sites, a fact illustrated by the proportion of bear remains among finds of wild animals, which reaches a mean value of only 0.7 %. At Late Medieval sites with statistically significant amounts of wild mammal remains bears reach maximum proportions at Hitzacker-Weinberg (1.2–1.6 %), whereas the proportions are less than 1 % at all other relevant sites (Table 10).

In northern Germany, bears became generally rare and then extinct much earlier in densely settled and farmed lowland areas than in mountain regions (Butzeck et al. 1988); a correlation that can also be found in Austria and Switzerland (Kunst/Pacher 2019). But Butzeck et al. (1988) also mention another reason for the rapid decline of the bear in Late Medieval/early modern times – the development of hunting weapons and techniques, in particular the distribution of firearms.

As mentioned above, the quantity of bear remains in Late Medieval archaeozoological assemblages is low, but at the same time the high constancy reflects clearly that "hunting pressure" meant in those days that people began trying to kill every single bear they encountered, whether the bear was searching for food near settlements, discovered during regular hunts, or found accidentally (Lindner 1940; for examples cf. Schmidt 1856). At least in parts of central Europe, the authorities allowed the hunter to keep the dead bear after registration (Lindner 1940). The changing attitude towards the bear as an enemy of man is caused both by the massively increasing human population, with its need of large herds to feed it, and, after 1000 CE, the change in religion also in the east. Christianisation transformed the image of bears in a drastic way from powerful and respected "kings of the forest" to redoubtable "beasts" with a close connection to the devil (Molsdorf 1926, 133). It was for the purpose of taming and conquering the devil that the practice of dancing bears spread over northern Germany and many other parts of Europe in medieval times (Brunner 2010, 139–146).

During Late Medieval times and later, bears were already being kept as exotic attractions in special bear-pits (Hauck 1963; Butzeck et al. 1988). In order to provide such entertainment, it was necessary to catch living bears, and for this purpose special kinds of traps came into use. Their distribution can be used as indicator for the last refugia of bears, but they are scarce in our area of interest and more widely distributed in the mountains of Thuringia and Saxony (see below; cf. Butzeck et al. 1988, 39–42). So-called *Bärengärten* (bear gardens) as a part of the garden culture of the elite were already becoming popular at the beginning of the 17th century, but these, too, were distributed mostly further south. The only *Bärengarten* in our study region was located in Oranienburg, where, at least in 1630 and 1732, bears from eastern populations arrived (Butzeck et al. 1988, 45).

The last centuries of the brown bear's presence in northern Germany and adjacent regions

Brown bears were part of the fauna of northern central Europe from the Late Glacial to modern times; their disappearance was a successive process that took more than 1,000 years and shows a temporal gradient from the west – with the earliest extinctions there – to the east (Fig. 5). The reasons why bears became extinct differ from region to region.

In the Netherlands, where brown bears were also present during almost the entire postglacial period, they disappeared during the Early Medieval period (Verhagen 1989). There is no evidence that hunting could have played a central role in the disappearance, but it is likely that the deforestation of large parts of the country destroyed the bears' habitat (Kuijper et al. 2016). A very late and extraordinary record from the Netherlands is a perfectly preserved left front leg including a paw found at Noordwijk, which has been directly radiocarbon dated to 880–970 cal. CE (1140 ±30 BP, GrA-66477; Kuijper et al. 2016) – probably the remains of one of the very last wild bears of this country.

Also in the western part of the study area, the North Rhine-Westphalian and Lower Saxony regions from the Netherlands to about 9°E, bears were already absent in Early Medieval times; they probably became very rare or even extinct here before the beginning of the common era (Figs. 4–5). Even given that hunting did not play a major social and economic role, the scarcity of bear remains in this region is striking. It can be assumed that the presence of the grave goods at the Liebenau burial field, dating to before the 7th century CE, indicate that hunters must have killed some of the last remaining animals living there. The single later record that refers to bears in this part of the investigated area stems from the site at Osnabrück's *Domplatz* in the High Medieval city centre, and probably concerns a dancing bear. Written sources mention two more Late Medieval records from this border region between the lowlands and the low mountain range – in 1445 a bear was killed near the town of Soest, and another one was killed one year later near Münster. It can therefore be supposed that these three animals belong to the same relict population living in the Münsterland or its surroundings until up to the end of the Late Medieval period (Rehage 2020).

In Schleswig-Holstein, according to Waldemar's *Erdbuch* from 1231, the last bear was killed in the early 13th century near the mouth of the Schlei Bay on the Baltic Sea (Lindner 1940). It is likely that the bones found in Schleswig (Schild site) originate from animals of the same population. However, also tamed bears occurred in Late Medieval towns, and it cannot be ruled out that the archaeological bear remains from Schleswig (Schild site), and also from Lübeck (Alfstraße 36/38; Hundestraße 13–17 sites) derive from such animals. The latest archaeological finds of bear remains in this area are most likely those from Bischofswarder and Scharstorf, dating to the 9th century. It is maybe no accident that both sites were located in the border region between Saxons and Slavs – this forested region called Limes Saxoniae was much less settled than all other parts of Schleswig-Holstein. The

bear remains from Haithabu might be of the same age but, since Haithabu was a pre-urban central marketplace, these finds were possibly obtained through exchange. They do not necessarily indicate the presence of bears in the area concerned, particularly if it is taken into account that the bear had already disappeared from neighbouring Denmark in Neolithic times (Aaris-Sørensen 2009). All later Danish bear remains found all over the country in Iron Age to Early Medieval graves are tooth pendants and claws, thought to be imports from Sweden (Aaris-Sørensen 2009).

In the central and eastern areas of the Lower Saxon parts of the lowlands and the northern half of Saxony-Anhalt, there are two High Medieval bear remains from towns – Hildesheim (Domhügel site) and Hitzacker (Weinberg site) – as well as from the castle of Burg Bodenteich. If these remains are from dancing bears, the extinction of bears in central Lower Saxony also occurred during the Early Medieval period. At Bardowick (Kirchenhügel site) and Hämerten there are two records from this period, and two more come from the Roman Iron Age (Hildesheim-Bavenstedt and Magdeburg-Cracau), which indicate a presence of the species in this region until at least the last quarter of the 1st millennium CE. The Harz Mountains were for a longer time a refuge for bears, since a local authority captured a bear in Werningerode at the end of the 15th century and, a few decades later in 1573, another bear was captured nearby (Butzeck et al. 1988). In 1686 the last bear was shot in the Harz Mountains; a memorial was later erected at the place where it was killed (Butzeck et al. 1988, fig. 14). Towards the east, in the northern half of the state Brandenburg, including Berlin, there are quite a lot of medieval settlements containing bear remains. Since most of them have been found in town centres, such as Berlin-Köpenick (Schloßinsel site), it is hard to say how long wild bears lived in this region; they probably occurred in some wooded regions up until the Late Medieval era.

This is definitely the case for the Mecklenburgian lakeland further north. Most of the medieval records deriving from this area date to the time between the 11th to 13th centuries, including those from Wustrow (Fischerinsel), Groß Nemerow (Krickow-Hanfwerder), Zirzow, Vipperow, Teschendorf, and Teterow. They indicate that bears were widely distributed in the lakeland in those days and possibly not very scarce. Later, in early modern times, the population crashed, but it took until the 18th century to extirpate the species in the investigated area completely (Butzeck et al. 1988).

It was in the Oder region and the Polish eastern part of Pomerania that the last bear population occurred (Schmidt 1856). Two aspects are remarkable about this region and period: First, three finds and records of the killings of complete bear families or single very young bears in 1727, 1730, and 1750 show the presence of a still-existing, but very small permanent Pomeranian bear population. The very last bear was killed in 1750, as a result of continuous hunting pressure. Second, the real economic damage caused by bears was small, and, although the Pomeranian authorities tried to extirpate the species by paying rewards for each bear, cases of bears being killed had become extraordinary events (Jakubiec/Buchalczyk 1993). In the 26 years between 1724 and 1750, in an area of about 300 x 150 km, people observed only 29 bears, including cubs, and these bears were held responsible for only 18 (sic!) dead cattle in the whole of Pomerania (calculated after Schmidt 1856). Attacks on humans were completely unknown in Pomerania in those days.

In the Polish lowlands and East Prussia, the last bears also vanished in the middle of the 18th century (Jakubiec/Buchalczyk 1993). The last refuge of bears in lowland Poland was Białowieża forest, on the border with Belarus, but here the last individuals were killed between 1873 and 1878 (Karpiński 1949). Today, only very occasionally, single individuals migrate from the east to Białowieża forest (Selva 2019). Later, bears remained only in the south, where the last stable and slowly growing bear population of central Europe continues to exist today, in the Polish and particularly the Slovakian Carpathian Mountains (Jakubiec/Buchalczyk 1993; Fernández et al. 2012).

Conclusion

The bear was, over the years and by many cultures, seen by humans as a very respectable being, not just as a an ordinary animal but a kind of "king of nature" (Schmölcke et al. 2017; Schmölcke/Nikulina 2022). In hunter-gatherer societies in present-day northern Germany, bears were not hunting trophies, nor they were considered as food competitors. This observation is in some contrast to the value of brown bear meat, which contains more calories per kilogram than that of all other terrestrial mammals available to humans (U.S. Department of Agriculture 2016). Taking this into account, it is not surprising that, from Late Medieval and early modern times, several recipes for bear meat are known (Pasda 2003, 52–53), and Gessner/Forer (1563, 33–35) list many possibilities for the use of a bear carcass for culinary or medical purposes. It is likely that humans and bears, for long time in history, avoided direct contact with each other. From the human perspective, hunting bears was very risky in relation to any potential benefits, and often there may also have been spiritual reasons for forbidding bear hunting. In addition, bears can tolerate living in much smaller population densities than e.g. herbivores, such as deer. Only in the Iron Age and the Roman Period did the killing of bears become more common in northern Germany, but this was possibly only for particular funeral purposes. Especially, the use of bear skins or single bear claws in burial rituals in Fennoscandia endured for nearly 1,000 years (see different contributions, this volume). The northern German plain was less affected by this tradition, but in several cases a connection to either death or funeral practices, or to noble hunting performed by the social elite, can be recorded.

As we have seen, the number of bear remains at archaeological sites as an indicator for the degree of human persecution remained low for a long time. We can assume that, prior to early modern times, hunting pressure was not strong enough to be the only reason for the bear's disappearance from large parts of its original range. It was foremost the alteration of its habitat that caused decreasing population densities and made the contact between adjoining populations more and more difficult. Extinctions of bears ultimately led to small and fragmented relict populations, first on local, later on regional levels. Relict populations without contact with their neighbours are vulnerable to stochastic events and to the loss of key individuals (Linnell et al. 2005). This applies in particular to predator species with their low reproduction rate. Often it needs only an increase in, or just the appearance of, negative factors to move the complete population into a situation dangerous for its survival.

In many parts of the investigated area, it was the medieval cultural landscape with high, and often still increasing human densities that reduced even the last remote areas of bears to critical points. Today, when conservation challenges include both the bear's large area requirements and its predatory behaviour, some stable bear populations can exist in countries with mean human population densities of 80 people/km^2 (Linnell et al. 2001), but, historically, bear populations started to decline at human population densities of 4 people/km^2 (Woodroffe 2000). The reasons for these differences are complex (Zedrosser et al. 2011), but to illustrate the limitation of suitable habitats for bears some calculations should be made: At the end of the Late Medieval period, about 9 million people lived in Germany (Pfister 1994); given an area of 540,000 km^2 and a regular human distribution (which is, of course, a massive simplification), a theoretical population density of 17 people/km^2 can be calculated. This theoretical value increased in *c.* 1800 to a population density of 40 people/km^2 (Pfister 1994). Even if these values are of a more theoretical nature, they underline the habitat limitation of bears. Based on historical written sources (Butzeck et al. 1988, 32–37) the effects of a growing human population and forest exploitation on bears can be studied in detail for the northeastern part of our study area.

In addition to anthropogenic landscape changes, the growth of the human population, hunting with firearms, and shifts in spiritual or religious customs influenced the presence of brown bears in northern Germany in a very negative way. In the course of Christianisation, but especially

during Late Medieval and early modern times, bears were demonised. Similar to wolves, official orders signified killing them as a universal responsibility. It was finally the result of such intensive persecution that these large animals disappeared from wide parts of the European continent (Huber/Swenson 2013). Recently, in several European regions a comeback can be observed, partly promoted and stimulated in the context of wildlife conservation or restoration programs. These are the result of a slowly changing attitude toward this species in central Europe (as reflected in Kalb 2007 and especially obvious in Bürglin 2015).

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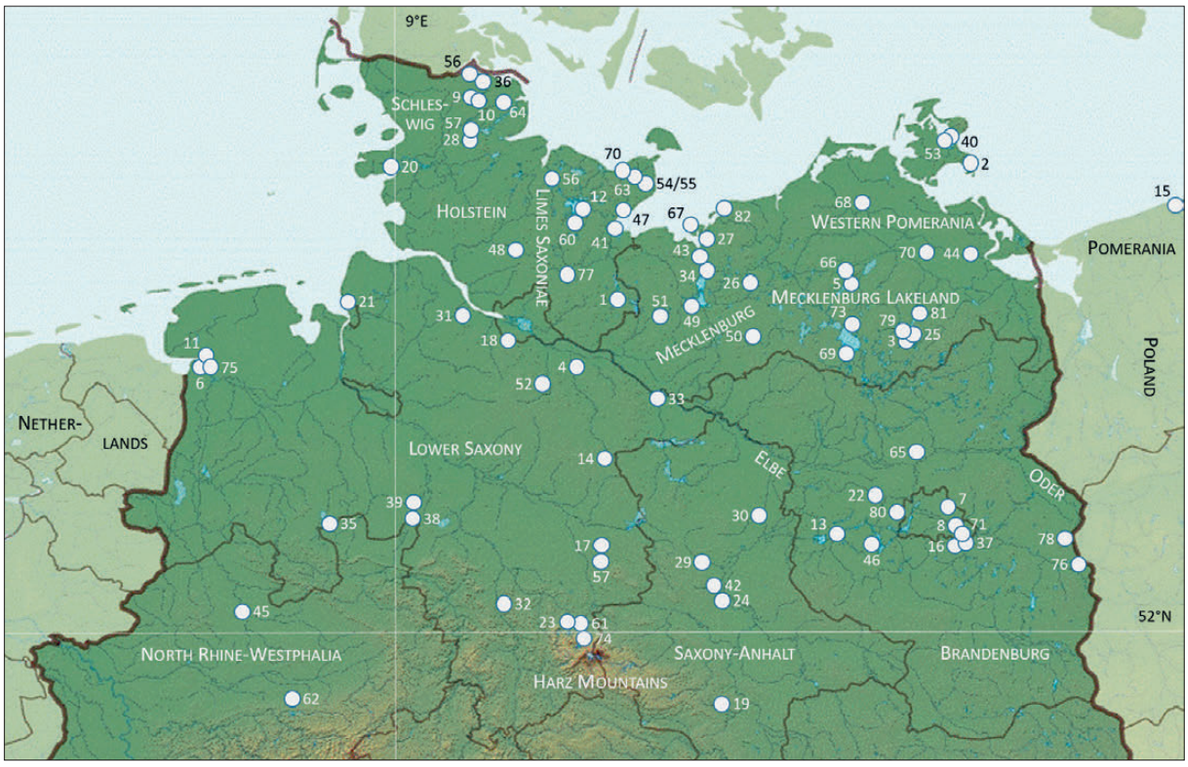


Fig. 1. Topographic regions and archaeological sites mentioned in the text. 1: Alt Mölln; 2: Baabe; 3: Bacherswall; 4: Bardowick; 5: Basedow; 6: Bentumersiel; 7: Berlin-Blankenburg; 8: Berlin-Köpenick; 9: Bistoft; 10: Bondebrück; 11: Boomborg/ Hatzum; 12: Bosau-Bischofswarder; 13: Brandenburg; 14: Burg Bodenteich; 15: Dąbki; 16: Deutsch Wusterhausen; 17: Döhren; 18: Ehestorf; 19: Eilsleben; 20: Elisenhof; 21: Feddersen Wierde; 22: Friesack 4; 23: Gielde; 24: Gommern; 25: Groß Nemerow; 26: Groß Raden; 27: Groß Strömkendorf; 28: Haithabu; 29: Haldensleben; 30: Hämerten; 31: Harsefeld; 32: Hildesheim; 33: Hitzacker; 34: Hohen Viecheln; 35: Hüde I; 36: Husby; 37: Kablow; 38: Leese; 39: Liebenau; 40: Lietzow-Buddelin; 41: Lübeck; 42: Magdeburg; 43: Mecklenburg; 44: Menzlin; 45: Münster; 46: Neu-Plötzin; 47: Neustadt/Holstein; 48: Nützen; 49: Ostorf; 50: Parchim-Löddigsee; 51: Parum; 52: Putensen; 53: Ralswiek-Augustenhof; 54: Rosenfelde; 55: Rosenhof; 56: Rüde; 57: Runstedt-Elzrandsiedlung; 58: Scharstorf; 59: Schleswig; 60: Seedorf; 61: Seinstedt-Erbbrink; 62: Soest; 63: Starigard/Oldenburg; 64: Süderbrarup; 65: Teschendorf; 66: Teterow; 67: Timmendorf-Nordmole; 68: Tribsees; 69: Vipperow; 70: Völschow; 71: Waltersdorf; 72: Wangels; 73: Waren-Stinthorst; 74: Werningerode; 75: Westerhammrich; 76: Wiesenau; 77: Wolkenwehe; 78: Wüste Kunersdorf; 79: Wustrow; 80: Zeestow; 81: Zirzow; 82: Rerik (map based on TUBS, wikipedia).



Fig. 2. Perforated canine teeth from late Neolithic (3200–3000 BCE) brown bears have been found not only in the cemetery of Ostorf (Mecklenburg-Western Pomerania), but also – depicted here – in settlement contexts such as Oldenburg LA 232, Schleswig-Holstein (photo J. Schüller, Landesmuseen Schleswig-Holstein).



*Fig. 3. Brown bear (*Ursus arctos*) mandible including fourth premolar from the Roman Iron Age site of Völschow, Mecklenburg-Western Pomerania (photo M. Breede, after* Schmölcke/Breede *2011, fig. 2).*



*Fig. 4. Early Medieval records of brown bears (*Ursus arctos*) in northern Germany. The distribution indicates a reduced range that was limited to regions northeast of the river Elbe (map based on TUBS, wikipedia).*

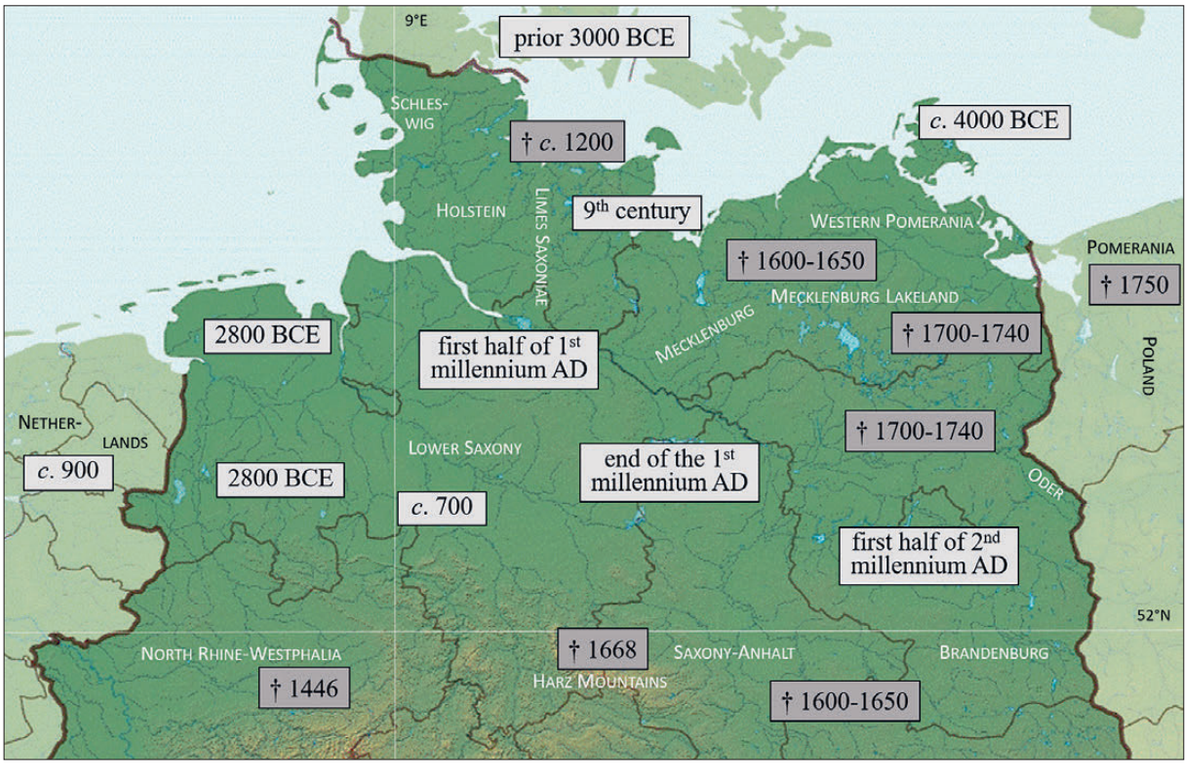


Fig. 5. Last archaeological records (light grey) and the last mentions of bears being killed according to written sources (dark grey; cf. text and Butzeck *et al. 1988) in northern Germany and adjacent areas (map based on TUBS, wikipedia).*

*Table 1. Data basis. NISP: Number of Identified Specimens; NISP (%): proportion of bear remains within NISP of wild mammals. *All these remains are distal phalanges deriving from human burials. **When excluding the comprehensive assemblages from two so-called hunting stations (Hüde I, Parchim-Löddigsee) the value is reduced to 42 %. The complete original data are available online (cf. Heinrich et al. 2016).*

Period	Sites (n)	Wild mammals (n)	Wild mammals (%)	Bear			
				NISP	Sites	Constancy (%)	NISP (%)
Late Glacial	18	4,430	100	0	0	0	0
Mesolithic	43	10,918	97.2	29	6	14.0	0.27
Neolithic	80	32,534	64.7**	179	13	16.3	0.55
Bronze Age	11	284	5.3	1	1	9.1	0.35
Iron Age	26	227	1.2	110*	9	34.6	48.5
Roman Iron Age	54	1,164	1.3	40	7	13.0	3.44
Early Medieval	83	12,468	4.5	83	15	18.1	0.67
Late Medieval	82	16,349	5.4	115	19	23.2	0.67
Early Modern	17	408	5.1	0	0	0	0
Total	**414**	**79,449**		**557**	**70**		

Table 2. Number and proportion of brown bear remains at Mesolithic archaeological sites in northern Germany. Listed are only sites with a minimum of 200 identified wild mammal remains. NISP: Number of Identified Specimens of wild mammals. References: Friesack 4 – Schmölcke 2016; Rosenhof, Timmendorf-Nordmole I, Lietzow-Buddelin, and Rosenfelde – Hartz et al. 2011. All further references and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994. For the location of the sites, see Fig. 1.

Site	Dating (BCE)	Type	NISP all	NISP bear	% bear
Friesack 4	9th millennium	Riverside	4,986	15	0.3
Hohen Viecheln	9th millennium	Lakeside	1,498	9	0.6
Rosenhof	5th millennium	Coastal	686	0	0
Timmendorf-Nordmole I	5th millennium	Coastal	551	0	0
Lietzow-Buddelin	5th millennium	Coastal	516	0	0
Rosenfelde	5th millennium	Coastal	485	0	0
Rüde	5th millennium	Lakeside	330	0	0
Bondebrück	6th millennium	Lakeside	302	1	0.3
Tribsees	8th millennium	Lakeside	277	2	0.7
Ralswiek-Augustenhof	5th millennium	Coastal	256	0	0
Seedorf (pit C)	5th millennium	Lakeside	200	0	0

Table 3. Number and proportion of brown bear remains at Neolithic archaeological sites in northern Germany. Listed are only sites with a minimum of 200 identified wild mammal remains. NISP: Number of Identified Specimens of wild mammals. References: Wolkenwehe-Heidmoor – Ewersen 2007; Neustadt/Holstein – Glykou 2016; Timmendorf-Nordmole III – Hartz et al. 2011. All further references and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994.

Site	NISP wild	NISP bear	% bear
Hüde I	8,679	145	1.7
Parchim-Löddigsee	6,712	4	0.1
Wolkenwehe	4,776	0	0
Wolkenwehe-Heidmoor	4,511	10	0.2
Neustadt/Holstein	3,617	1	<0.1
Basedow	562	2	0.4
Baabe	549	0	0
Eilsleben	490	4	0.8
Bistoft	373	0	0
Wangels MN V	513	0	0
Waren-Stinthorst	269	5	1.9
Timmendorf-Nordmole III	227	0	0

Table 4. Northern German burials from the pre-Roman Iron Age with distal phalanges of brown bear (after Schönfelder 1994, tab. 1 and Beermann 2016, with references therein).

Site, grave number	Dating	Sex	Social position	Bear claws
Döhren, f. 55	450–300 BCE	female	leading	4
Leese, gr. 1995	400–150 BCE	female?	unknown	14
Ehestorf-Vahrendorf, gr. 513	350–120 BCE	unknown	poor	15
Ehestorf-Vahrendorf, gr. 1060	350–120 BCE?	unknown	high	10
Alt Mölln LA 13, gr. 107	250–150 BCE	unknown	normal	6
Husby, gr. 1033	120–50 BCE	male	leading	2
Ehestorf, gr. 1060	1st ct. BCE	male	high	10
Harsefeld, gr. 136	1st ct. BCE	unknown	high	3
Harsefeld, gr. 141	1st ct. BCE	male	high	3
Putensen, gr. 175	1–50 BCE	male?	poor	14
Putensen, gr. 215	1–50 BCE	male?	poor	14
Putensen, gr. 392	1–50 BCE	male?	poor	1
Putensen, gr. 394 or 397	1–50 BCE	male?	normal	12
Neu-Plötzin, 1934/2520	end of 1st century BCE	female?	leading	2

Table 5. Archaeological sites from the pre-Roman Iron Age with a minimum of about 300 identified mammal remains. NISP: Number of Identified Specimens of mammals. References and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994.

Site	NISP all	NISP wild	% wild	NISP bear	% bear
Boomborg/Hatzum	12,244	23	0.2	0	0
Wüste Kunersdorf	5,058	42	0.8	0	0
Gommern	398	10	2.5	0	0
Runstedt-Elzrandsiedlung	307	0	0	0	0
Zeestow	298	0	0	0	0

Table 6. Northern German burials from the Roman Iron Age and Migration Period with distal phalanges of brown bear (after Schönfelder 1994, tab. 1 and Beermann 2016, with references therein).

Site, grave number	Dating	Sex	Social position	Bear claws
Parum, gr. 103 or 107	AD 1–50	female + male	high	12
Haldensleben (Südhafen), gr. 6	1st–2nd century	female	leading	2
Haldensleben (Südhafen), gr. 7	1st–2nd century	unknown	poor	1
Haldensleben (Südhafen), gr. 8	1st–2nd century	unknown	poor	1
Süderbrarup, gr. 402	5th century AD	unknown	leading	12
Süderbrarup, gr. 934	4th century AD	male?	leading	6

Table 7. Number and proportion of brown bear remains at Roman Iron Age settlement excavations in northern Germany. Listed are sites with a minimum of 1,000 identified mammal remains, which includes all sites with a minimum of 200 identified wild mammal remains. NISP: Number of Identified Specimens of mammals. References and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994.

Site	NISP all	NISP wild	% wild	NISP bear	% bear
Feddersen Wierde	49,557	237	0.5	0	0
Waltersdorf	6,691	261	3.9	4	1.5
Bentumersiel	4,943	13	0.3	0	0
Hildesheim-Bavenstedt	4,701	52	1.1	1	1.9
Völschow	3,945	49	1.2	1	2.0
Gielde-Am Kaiserstein	3,475	243	7.0	0	0
Deutsch Wusterhausen	1,465	36	2.5	0	0
Seinstedt-Erbbrink	1,284	7	0.5	0	0
Kablow	1,210	87	7.2	0	0

Table 8. Number and proportion of brown bear remains at Early Medieval archaeological sites in northern Germany. Listed are only sites with a minimum of 200 identified wild mammal remains. NISP: Number of Identified Specimens of wild mammals. References and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994.

Site	NISP all	NISP wild	% wild	NISP bear	% bear
Haithabu	255,829	5330	2.0	16	0.3
Wiesenau	3,037	1230	32.0	0	0
Scharstorf	16,074	1102	6.9	2	0.2
Bischofswarder	5,235	774	14.8	10	1.3
Hitzacker-Weinberg (7th–10th century)	15,935	460	2.9	3	0.7
Groß Raden	19,236	525	2.7	9	1.7
Brandenburg (Dominsel)	18,949	500	2.6	4	0.8
Starigard/Oldenburg (horizon 2–5)	25,899	494	1.9	11	2.2
Berlin-Blankenburg	655	382	58.3	4	1.0
Mecklenburg	12,445	265	2.2	7	2.6
Bacherswall	2,626	212	8.1	2	0.9

Table 9. Northern German Early Medieval burials with bear claws (Beermann 2016 lists Liebenau as the only known Early Medieval location). References and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994.

Site, grave number	Dating	Sex	Social position	Bear claws
Liebenau, R13/B5	5st–7th century	female	unknown	2
Liebenau, 47 from R13/B5	5st–7th century	female	unknown	2
Liebenau, R14/B3	5st–7th century	female	high	3
Liebenau, R14/B4	5st–7th century	female	normal	1
Liebenau, S13/B1	5st–7th century	female?	high	5

Table 10. Number and proportion of brown bear remains at Late Medieval archaeological sites in northern Germany. Listed are only sites with a minimum of 200 identified wild mammal remains. NISP: Number of Identified Specimens of wild mammals. References and the complete original data are available online (cf. Heinrich et al. 2016) or in Benecke 1994.

Site	NISP wild	NISP bear	% bear
Hanfwerder	4,640	17	0.4
Hitzacker-Weinberg (12th–16th century)	2,509	44	1.8
Hitzacker-Weinberg (11th–12th century)	2,449	29	1.2
Berlin-Köpenick (Schlossinsel)	3,020	3	0.1
Schleswig (Schild)	1,349	3	0.2
Fischerinsel near Wustrow	729	1	0.1
Zirzow	552	1	0.2
Neu-Nieköhr	267	0	0
Kietzwerder near Prillwitz	239	0	0

In the company of bears: The role and significance of the bear from the perspective of the Holocene hunter-gatherer-fishers of the East European Plain forest zone (10th–3rd millennium BC)

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Keywords: Brown bear, hunter-gatherer-fishers, East European Plain forest zone, portable art, burial rites, settlement layers, rock art

Abstract: The bear was the constant neighbour of prehistoric hunter-gatherer-fishers of the East European Plain forest zone (10th–3rd millennium BC) and also a part of their hunting prey. Nevertheless, scholars usually emphasise its special spiritual role, as it was quite different from the roles of other species of the boreal forest animal realm for both ethnographically-known Siberian indigenes and Holocene hunters. Here, we have made an attempt to put together and analyse all groups of the material culture sources which can give us some hints about the status, significance and symbolic meaning of the brown bear in the Holocene East European Plain forest zone – portable art, rock art, and osseous bear remains in settlement and burial contexts. These data show the significant presence of bear bones in kitchen waste and among bone tools, the sporadic presence of bear images in petroglyphs and cemetery materials, and the complete absence of them in Mesolithic/Neolithic portable art up until the start of the Final Stone/Bronze Age, around 3000 cal BC, when its presence increases.

Introduction

The "bear image topic" has been among the most studied ones of north Eurasian ethnography and archaeology for at least one hundred years. The enormous bulk of literature is represented mostly by the ethnographical studies of the Siberian aborigines but also by archaeological publications. These discuss a wide range of themes and can be grouped in the following way: 1) case studies that discuss the peculiarities of the bear image in both material culture and folklore, and 2) analytical studies that discuss the perception of the bear by particular Siberian aboriginal peoples, or by prehistoric societies. The most popular topics for ethnographical study are the bear festivals conducted in the 19th–20th centuries (see Bakels/Boer, this volume), and the role of the brown bear as an ancestor in aboriginal spiritual belief. For archaeological studies, the most prominent topic is the role of the cave bear in Palaeolithic spirituality, based on bear skull finds in European caves (Bahn 2011).

The topic we are going to present in this paper lies chronologically between the above-mentioned Palaeolithic archaeology and Siberian aboriginal ethnography, and it deals with the mid-Holocene forest hunters of the East European Plain. We have decided that there is no need to refer to the numerous ethnographical pieces of evidence concerning the place of the bear in the worldview of the indigenous peoples of the taiga, as these are mostly collected at the Exchange for Local Obser-

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 291–312 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134338

vation and Knowledge of the Arctic (ELOKA).[1] There has been, from time to time, a temptation for scholars to extrapolate the ethnographical data from the reconstruction of the prehistoric hunters' spiritual sphere, but in this study we will try to escape this methodology and will analyse as deeply as possible the purely archaeological evidence of bear representations that were created by mid-Holocene hunter-gatherer-fishers – primarily those of the Central Russian regions (the Volga-Oka interfluve), while at the same time pointing out the analogies from Scandinavia and the eastern Baltic states.

The main questions are: What was the meaning of the bear for these people? Which peculiarities can be revealed in the process of analysing the bear image in portable and rock art (petroglyphs), and what can be discovered after the analysis of bear remains in the settlement layers/debris and burial inventories? One starting point for us was a paper by Knut Helskog, discussing the role of the bear based mainly on prehistoric Scandinavian rock art, in which he regrets that bear effigies and bear bones are very scarce finds in Scandinavia (see Helskog 2012, 217). Russian materials yield far more potential for conducting the same kind of study, namely portable art representing the bear as well as northwest Russian petroglyphs depicting bears, and the burial and settlement materials, i.e. brown bear osseous remains. On the other side, we sincerely hope that this paper can be a successful addition to the already-existing collection of papers in English, devoted both to northwest Russian petroglyphs and to the East European forest zone portable art (Kolpakov/Shumkin 2012; Kashina/Zhulnikov 2015; Poikalainen/Ernits 2019; Mantere/Kashina 2020; Kashina/Emelyanov 2020).

Aims of the paper

Focusing initially on the portable art items of the East European forest zone, we aim to achieve the most objective conclusions, and for this reason, we will also discuss several additional issues, such as:

- the number and the peculiarities of petroglyphic bear images at Lake Kanozero, Lake Onega and the White Sea;
- the role of the bear as prey, based on random materials in osteological collections from Central Russian Neolithic sites;
- the use of bear remains in rituals, based on burial inventories, from a wide time span (generally dating to around 6200–3000 cal BC), as well as on the so-called "ritual hoards" of Central Russia (dating to around 3600–2700 BC).

The conclusion arrived at by Helskog (2012, 232) in the course of his bear image study of Scandinavian rock art, supplemented by other data sources, is quite ambiguous, postulating that the variation in bear image representation reflects local identities within a general system of beliefs. If we recognise the generally common climate conditions, fauna, vegetation, and the hunter-fisher-gatherer way of life, which continued for much longer in the East European forest zone than in most parts of western Europe, the perception of the bear image in Scandinavia and the northwestern Russian taiga forests in the mid-Holocene could and should have been very similar. The observed change of this perception over the course of time did not necessarily occur with the advent of agriculture and herding, but probably during more ancient periods, namely the Mesolithic, the Neolithic, and the Bronze Ages, and there were still hunter-gatherer-fishers in the Bronze Age taiga zone.

In the course of this study, based on the analysis of all the represented data which, in general, constitutes the archaeological materials dated to 6200–2000 BC, we will make an attempt to reveal the

1 ELOKA – an Arctic research data management program that combines local traditional knowledge and local observations data from Indigenous Arctic residents utilising effective and appropriate western methods to properly share Arctic Indigenous Knowledge. Cf. https://eloka-arctic.org/bears.

role and the meaning of the bear for the mid-Holocene hunter-gatherer-fishers of the East European Plain forest zone.

The background of the study

During the time period in question, the preferable living places were the lake lowlands, and especially those areas near the river mouths that were connected to a lake. These lowlands contained rich food resources, such as fish and waterfowl, so in many cases the most comfortable spots were settled for several millennia, and there are large multi-period sites (Burov 2011). The territory of the East European Plain forest zone is so huge that it still contains a lot of blind spots that have not been studied by archaeological excavations or surveys.

The beginning of the Neolithic period, according to Russian nomenclature, coincides with the moment the first ceramics appeared, which had a different chronology in the southern and northern areas of the forest zone. In any case, the time of 6000–5000 BC was generally the transitional period in most parts of the forest zone, which saw not only the appearance and development of the earliest types of ceramic ware (Kashina/Zhulnikov 2015) but also the global change in flint-knapping technologies – the change to the use of a flake as the main preform, instead of a blade (Lozovski 2003). The information about house building in the period 6200–3700 cal BC is quite scarce. At some Central Russian settlements, remains of Early Neolithic round huts with hearths were discovered, which could be reconstructed as light constructions above ground, covered by hides. The remains of such constructions were detected for the whole Mesolithic period as well, but they are usually quite ambiguous (Leonova 2004). The multi-period character of many settlements introduces further confusion into the discussion of the history of house building.

Nevertheless, in the 1970s the general Neolithic settlement system was reconstructed, based on survey data, by Vladimir Sidorov for the Moscow region and partly for the adjacent ones. The settlements and campsites of 5000–3700 cal BC of the so-called Pitted-Comb Ware culture were mapped, based on a wide range of excavations, test pits and hand-collected materials representing this highly-recognisable ceramic type, which demonstrated the dense network of inhabited spots, not absolutely contemporaneous of course, but dated to a wide time range of more than a millennium. These settlement clusters were usually surrounded by "empty zones" of around 30 km in diameter, recognised as the hunting/gathering grounds (Sidorov 1975). Probably, this mode of settling can be extrapolated in general to the whole East European forest zone, including the later period of 3700–2700 BC, but excluding the upland areas that do not contain the proper water bodies (for example, the Smolensk Upland). The building of semi-subterraneous large dwellings of more than 100 m² started around 3700 BC, simultaneously in Finland, northwestern and Central Russia. This is of great interest, as it marks not only the general increase of sedentism (Herva et al. 2014) but also the known changes in the social structure. Together with this, a crucial change in the ceramic technology took place: In the region of the Pit-Comb Ware and Comb-Pit Ware cultures, organic admixture started to prevail over the mineral one, and thus the Late Comb Ware appeared in the circum-Baltic, while in the central and in part of the northern Russian zones the ceramic type cardinally changed from Pit-Comb Ware to the Volosovo Ware, which features shells and bird down as the main admixtures. The core reasons for these movements/changes are generally unknown. Later, around 2900 BC, new inhabitants came into the forest zone, marking the beginning of the Bronze Age. One branch of the Corded Ware cultures that spread over the Russian northwest and centre is known as the Fatyanovo culture (dated to around 2900–2000 cal BC). This culture was represented by semi-sedentary or sedentary herders, who settled the river valleys and obtained the first imported bronze items. Recent genetic data suggest that there was almost no mixing between hunter-gatherers and herders (Kraynov 1972; Nordqvist/

Heyd 2020, 17). Another branch, known as the Battle Axe culture, together with influences from the territories of Sweden and Finland, also affected the Karelian and northern Russian territories. The relationship between the newcomers and the forest hunter-gatherer-fishers still remains poorly studied. They obviously contacted each other, despite inhabiting different eco-niches, as both of them were widely practicing hunting, gathering and fishing. The last hunter-gatherer-fishers remained at the centre of the East European Plain forest zone until at least the Early Iron Age (the end of the 1st millennium BC), and in some taiga areas for much longer.

The bear image in portable art

The portable art of the East European hunter-gatherers is an outstanding phenomenon, which reveals the wide and multi-faceted use (mostly in everyday life) of sculptural and graphical effigies representing humans and animals of different species. The astonishing fact is that the bear image is almost absent in this. The portable art of the Final Mesolithic and the Early Neolithic (around 6200–4000 BC) is represented by a total of only about a dozen carved sculptures and pendants of bone/antler with the images of humans, snakes, elk, and birds (see for example Jonuks 2016), possible sledge-runners with elk heads, and the elk-head staffs made of antler (Mantere/Kashina 2020), but absolutely no bear images.

The next period (around 4000–3000 BC) was the time when portable art blossomed. The total number of finds is around 650 to date, and several groups can be distinguished – ceramic sculptures featuring human, bird, snake, beaver, otter, and elk images (Kashina 2007), sculptural and graphic images on special (ritual?) ceramic vessels depicting waterfowl and humans (Pesonen 1996; Kashina 2006; Kashina/Zhulnikov 2015), carved sculptures of a different kind, and, finally, flint sculptures (Kashina 2002; 2005). Carved pendants were widely distributed over the East European Plain forest zone during this period and consisted of numerous bird and snake images but also, rarely, those of beaver, elk, fish, and even a seal and a wisent. The other categories of carved sculptural items are represented by tools, which were probably used occasionally during rituals. These are differently-shaped bone lancets and spatulae with bird silhouettes or bird heads, wooden ladles and spoons with waterfowl heads, a wooden oar with bird heads, a bone pin with an elk head, etc. (Kashina 2005). Again, the antler elk-head staffs were common for this time range. And finally, several finds of carved bear images were detected (Fig. 1).

Two wooden ladle handle tips, shaped into distinct bear heads, were found in the settlement layers at Usvyaty IV (Pskov region, Russia) and Sārnate (Latvia) (Fig. 2.1–2). Obviously, these items copy the well-known and widely disseminated (according to peat-bog site materials) ladles with waterfowl-shaped handle tips (Kashina/Chairkina 2011), but they look very unnatural – a swan has a long neck, but not a bear. This makes us assume that the waterfowl handles came first, while the bear handles appeared later. If we compare the absolute dates, obtained in the context of both sites, we see that Sārnate was occupied in the Final Stone Age, at the turn from the 4th to the 3rd millennium BC, and Usvyaty IV is believed to have been inhabited some centuries later – around the mid-3rd millennium BC, which was the period of the Early Bronze Age, according to the local chronology (Berg-Hansen et al. 2019; Bronzezeit: Europa ohne Grenzen 2013, 346). The next find is a bone spatula from the settlement layer of Usvyaty IV, dated to the second half of the 3rd millennium BC (Bronzezeit: Europa ohne Grenzen 2013, 346; see Fig. 2.3). Taking into account the presence of a wide series of bone spatulae and lancet finds decorated with bird figures or heads and dated to around 3600–3300 cal BC in Latvia, Estonia, and adjacent regions of Russia (Bērziņš et al. 2014), we can presume the same process: The bird image that was depicted on these special tools preceded that of the bear. A bone item (9 cm in length) with a probable bear head at the top of the rod was

found in the settlement layer of the Abora I site, Latvia, which is dated to between the Final Stone Age and the beginning of the Bronze Age (Fig. 2.4; Loze 1983). The rod is decorated with groups of short incisions, but the general purpose of this object is unknown. The single find of a fragment of a burnt wooden item (4.3 cm in length) resembling a bear head was found in the same area at Lake Sennitsa (Pskov region) and looks much larger than the bear heads from Sārnate and Usvyaty IV, so it is hard to attribute it correctly (Bronzezeit: Europa ohne Grenzen 2013, 360). A bone spoon with a bear head was found in a dwelling at the Imerka VIII site (Republic of Mordovia) and most probably dates to the turn from the 4th to the 3rd millennium BC or a slightly later period. It should be mentioned that material remains of primitive bronze smelting were detected at this settlement (Korolev/Stavitskiy 2006; see Fig. 2.5). A bear metatarsal with a sculpted bear head on the epiphysis was found in the multi-period settlement of Chornaya Gora (Ryazan region) and, according to the stratigraphy, may belong to the Volosovo or Bronze Age materials, as may the above-mentioned Imerka VIII item (Tsvetkova 1969, 34–36; Fig. 2.6). Functionally, it could have been a sinew-thread-treating tool, as it has several grooves around the bone diaphysis. Two carved pendants made of bone and of amber, respectively, which could possibly have represented a bear, are known from the settlement of Tamula I (around 3900–2600 BC; bone pendant: Fig. 2.7) and the Tamula burial ground (burial XII, 3000–2600 cal BC) in Estonia (Jaanits 1957; Tõrv 2016, 186). The precise date of the bone figurine is unknown, but the modelling of its muzzle is reminiscent of the Sārnate wooden ladle mentioned earlier. The amber figurine is very schematic and should be attributed generally only as a mammal. Two wooden ladles or spoons, each with a handle tip carved into the shape of a mammal (interpreted as a bear head) were found in peatbogs in Laukaa (central Finland) and in Humppila (south Finland). Stylistically, these heads look more or less similar to the Sārnate and Usvyaty ladles but the actual date of the Finnish ones is unknown (Immonen 2002). Summing up the overview of the ritually carved bear representations, it seems quite clear that they represent a small group that leans geographically more or less to the eastern Baltic area, and all date to a slightly later time in comparison with most of the figurative portable art of the East European Plain forests, which leads up to the chronological period attributed in the local chronologies as the Early Bronze Age.

Around 3300 cal BC, and probably up until 2000 cal BC, another phenomenon, flint sculptures, appeared and disseminated throughout a large part of the East European forest zone, mainly Central Russia. Most of the finds come from multi-period settlement layers, thus their precise chronology is unknown. The common use of bifacial technology and pressure flaking gave way to the production of flattened flint sculptures of humans (Kashina 2002) and animals. Their total number is currently around 180 pieces. Remarkably, this tradition did not reach the territories of the modern Baltic states and Finland, as there were almost no flint quarries and the good flint came to these areas from elsewhere. Flint knapping technology does not allow the making of a detailed figure, so, in some cases, the interpretation of an image can be ambiguous. Series of sculptures have similar silhouettes, which helps in distinguishing several morphological groups such as a human (a simple one, a female, a supernatural creature), a bird, a snake, a fish, an unidentified mammal, an elk, a beaver (an otter?), a wild-boar, a white whale, and, finally, a bear.

Only three flint sculptures can be unequivocally identified as bears. All of them were single finds. The first one is from Zimnyaya Zolotitsa (Arkhangelsk region, the White Sea shore). It is of an outstanding size – 9.5 cm long (Fig. 3.1). According to S. Zamyatnin, it could represent a polar bear, as it has quite an elongated muzzle (Zamyatnin 1948). Two other flint sculptures – from the Bagon Otmel' (5.9 cm high) and Sinyaya Gora (5.2 cm high) sites – were found in the Tver region. The distance between these sites is only 100 km. The objects have very similar silhouettes with their bent hind limbs (Fig. 3.2–3), which are slightly reminiscent of the human profile representations on the northwest Russian petroglyphs and also of two unique, human profile flint sculptures from the north Russian areas – the Olskiy Mys (Arkhangelsk region) and Vis II (Komi Republic) sites.

By silhouette and size, the flint sculptures strongly resemble the pendants carved from bone, and there is no doubt that they were partly contemporaneous. The presence of notches on some flint bird, snake, mammal, and fish sculptures suggests that all of them were pendants, including even those without special notches. As for the flint sculptures depicting humans, the presence of arms, legs or limbs easily allowed the sculptures to be attached to clothes or skin/leather equipment (?). Sometimes, the worn surface is clearly visible, so probably these items had been in use for a long time. The hypothesis of these pendants' totemic essence was proposed earlier (Kashina/Emelyanov 2020) but, among the whole assemblage of flint sculptures, the bear image is clearly underrepresented. Only beaver/otter, human profile and white whale images are rarer: human (en face; n = 93), bird (n = 28), snake (n = 15), mammal, unidentified (n = 14), fish (n = 13), elk (n = 7), bear (n = 3), beaver/otter (n = 2), human (in profile; n = 2), white whale (n = 1). As the study of carved pendants has already shown, only two probable bear pendants are known from Estonia, but in Central and North Russia they are completely absent.

The rarity of the known carved and flint-knapped bear sculptures provokes the question about the real affiliation of the bear to the group of totemic animals. The prominent Russian ethnographer and archaeologist Mikhail Kosarev has argued that the totemic essence of the bear image in Siberian mythologies was greatly exaggerated by the generations of ethnographers who took part in the process of studying the bear festival. According to the field materials collected from different Siberian peoples, the bear was associated with the underworld but its kinship with humans has never been revealed (Kosarev 2003, 101–104). According to M. Kosarev, the same misunderstanding (i.e. postulation of totemic essence) has taken place in ethnographic and archaeological literature concerning the perception of the elk image in the Siberian aboriginal world-view. In fact, the elk image was generally connected with positive, universal, and solar symbolism, but not with human ancestry. The prehistoric worshipping of mainly bird species as totemic ancestors by hunter-gatherer-fishers appears much more real because of the deep connection between the bird image and the notion of the human soul, and, according to the archaeological finds of bird pendants, it has been practised since the Upper Palaeolithic period (for example in Siberia, around 20,000 years ago). This hypothesis fits well with the map of the East European forest zone portable art distribution in the Final Stone Age and at the beginning of the Bronze Age (around 3500–2500 cal BC). The elk-head staffs, for example, which existed continuously from at least the Final Mesolithic, were definitely the largest items among the portable art collection, reaching more than 40 cm in length (Mantere/Kashina 2020), which recalls the unique spiritual role of this animal. The bird pendants prevail among the whole collection of portable art, and are believed to be the images of totemic ancestors (Kashina/Emelyanov 2020), while pendants in the form of elk and bear are almost absent. Also, we can assume that all known items with a carved bear image appear very late, around 3000 cal BC, or even after this time.

The bear image in weaponry

If we presume that the elk and the bear have never been totem animals, but embodied far more universal notions and probably were even recognised as opposed entities, the time has come to analyse the hammer-axes with zoomorphic heads. These items appeared initially in antiquarians' collections of the 19th century but they still remain the most mysterious finds, as none of them have been found in a particular settlement or burial context until now. Their total number, including fragments, is 55, 27 of which were found in northwest and northern Russia. Typologically they are represented by two main groups – the mace (the animal head with the handle hole in it) and the axe (the animal head at one end of an item). They represent elk and bear heads but, in some rare cases, unidentified species occur, which were interpreted as a catfish, a seal, or an otter, as well as a phallus or an unclear image.

These stone items were found in the large territory that includes Sweden, Finland, Karelia, the Komi Republic and the Vologda, Tver and Yaroslavl regions (Carpelan 1977; Zhulnikov 2012), and all of them are occasional finds (Fig. 4.1–3). Researchers C. Carpelan and A. Zhulnikov recognise their ritual purpose, as these axes frequently have an abnormally small or narrow shaft hole, or even lack this, and a blunted blade. Also, some items were unfinished, unpolished and demonstrated traces of picketage technique, which provides evidence of their probably local production (Zhulnikov 2002). According to the observations of A. Zhulnikov, the animal-head axes had different prototypes among the "ordinary" axes, which allow a differentiated dating. Some of them, having a rectangular cross-section, can be dated to between the Final Stone Age and the beginning of the Bronze Age, around 3300–2500 BC (the time of Asbestos Ware in Karelia, and Porous Ware with shell admixture in other northern Russian regions). The others, with a ridge and a cylindrical hole and "casting seams", recall the axes of the Battle Axe culture and can be dated to 2800–2300 BC. In the same period, the Globular Amphorae culture (Fatyanovo) influenced the East European Plain forest zone, which is evident by the changes that occurred in the ceramics named "Fatyanoid Ware" by some researchers (Volkova 2019). It should be noted that almost all animal-head axes were found outside the territories of the Corded Ware, Globular Amphorae (Fatyanovo), and Battle Axe cultures and, despite the vague dates, most probably belonged to the taiga societies, which generally kept to the hunter-gatherer-fisher way of life. A. Zhulnikov also argues that the increased meaning of the bear image in spiritual life was caused by the intensification of violent clashes in the forest zone: The bear, which, judging by these stone axes, was generally much more "popular" than the elk, had become a symbol of "Man the warrior". The item itself could have been a scepter, a symbol of a warrior's power. Alternatively, it may have been used as a weapon for sacrifices and was ultimately intended to be hidden or buried in the vicinity of a settlement forever, we can only speculate, e.g. after the owner's death or, for example, during a peace conclusion ritual (e.g. "to bury the tomahawk"; Zhulnikov 2012, 70–72). The number of objects is considerable, bearing in mind the fact that all these axes are single finds, hidden or discarded outside the settlements. Thus, we may propose that maybe each adult male possessed one. In this sense, the axes with sculptural heads could have been more or less synonymous in their symbolic meaning to the elk-head staffs (Mantere/Kashina 2020).

In the territory of present-day Russia, the majority (13 out of 27) of sculpted axes feature a bear head. All pieces are quite different in size, detail and rock type and, though some of them show a resemblance to each other, it is quite clear that the bear image carved on the axes was not strictly canonised. Also, the axe forms are quite different, which points to differences in their dating. Finally, it should be mentioned that bear-axes found in the territory of modern Sweden, Finland, and Russia are nearly double the number of elk-axes, which makes them the most frequently encountered pieces of portable art of the forest zone from the 3rd millennium BC. This probably means that the roles of the two most mighty and notable animal images in the hunter-gatherers' spiritual life underwent a cardinal change. The borrowing of the bear image by the Finnish/northern Russian, most probably still non-herding, societies and its outstanding popularity in the context of ritual weaponry may bear witness to the deep connections between herders and hunter-gatherer-fishers in the taiga area (Mantere/Kashina 2022).

The bear image in petroglyphs

As K. Helskog mentioned in his paper (Helskog 2012), the bear image occurred quite rarely on Scandinavian petroglyphs and paintings, except in Alta, Norway. One of the most intriguing scenes found in Alta is the bear hunt in the winter season. The features of natural rock were used to represent a landscape and a story, which includes episodes of chasing the prey using skis, the den as a natu-

ral cavity, the moment of killing, etc. Remarkably, the same compositions, sometimes without the particular landscape details, are known on northwestern Russian petroglyphs at Lake Kanozero (the Kola Peninsula, two compositions), Zalavruga/Vyg (Belomorsk, at least five compositions), and Lake Onega (South Karelia, three compositions; see Zhulnikov 2006, 115–117, 152–153; Kolpakov/Shumkin 2012, 300). The similarities between Scandinavian and northwest Russian petroglyphs were discussed many times, and both K. Helskog and E. Kolpakov concluded that large-scale regional differences prevail over the similarities of the image sets or some multi-image compositions. Even if the mythological features were common, the sites developed independently (Kolpakov/Shumkin 2012, 230; Kolpakov 2019, 29). It should be mentioned that the age of different petroglyphic groups varies and there is sometimes a wide chronological range: Alta – 4800–2700 BC, Onega – 5000–2000 BC, Belomorsk – 4000–2000 BC, Kanozero – 4000–1000 BC (Gjerde 2018; Zhulnikov 2010; Kolpakov/Shumkin 2012; Blyshko/Zhulnikov 2020).

The petroglyphic representations show that bears were hunted with spears, most likely in winter/early spring during hibernation. On the Belomorsk petroglyphs, the bow and arrow was also shown being used for the bear hunt. Zhulnikov (2006, 152–153) interprets the presence/absence of bear trails as the evidence of wintertime/summertime hunting (referring to bear trails left on the snow). The only scene of "bear the hunter" exists at Lake Onega – a bear chasing an elk. A quite similar one, in Alta, with a bear and a reindeer, is referred to by Helskog (2012, fig. 13). In addition, A. Zhulnikov stresses that petroglyphs represent mythological images and scenes as a kind of manual for young community members, and their creation acted as a repetition of mythological events in the present (Zhulnikov 2006, 115; Zhulnikov/Kashina 2010). Helskog (2012, 219) assumes "the use of bear figures in narratives or stories and possibly rituals", and "some of these illustrate stories that we know bears could not have been engaged in, except in legends and myths", but at the same time he admits that there were also bear scenes that were drawn from life. In summing up the analysis of bear images on petroglyphs, we assume that the bear was in general depicted rarely, though in some areas numbers of images were notably higher.

Osseous bear remains and tools in settlement layers

The only available source that allows a rough reconstruction of the scale of bear hunting is from the period 3500–2700 BC, and it takes the form of several, large osteological collections of the Volosovo culture settlements at the Volga-Oka interfluve. At these sites, excavated mostly in Soviet times, bone and antler had sometimes been rather well preserved in the dark, humified sandy sediments of the large semi-subterraneous dwellings or near the pit dwellings. There were not only artefacts and their debris, but also the far more numerous kitchen waste items consisting of mammal, fish, and bird bones. These unique collections of thousands of bone units are still poorly studied. Nevertheless, some available archive data from the 1970s' osteological studies concerning the River Oka sites of Chornaya Gora and Vladychino (Ryazan region) contain important information about bear hunting.

At the Chornaya Gora settlement, excavated during several seasons at the beginning of the 1970s (Andreeva 1974a; see Fig. 1), 197 bear bones were found, which represented no less than 15 individuals, while the total amount of mammal bones was 2,783. In this group, the bear bones were less numerous than those of elk and marten. Bear skeletal parts such as a skull, a mandibula, a scapula and pelvic and long bones were detected, of which most had been broken and which, according to E. Andreeva, bear witness to the consumption of bear meat and bone marrow. The bone measurements point to the highly variable age of the hunted individuals – from cubs to large animals. Twenty-four bear bones had been modified and were typologically defined as tools and personal ornaments – eight fibulae and two parts of a radius were turned into awls and have a pointed tip; three radius bones

were used as chisels, one as a hoe; two ulna bones were used as daggers and a dented point, respectively, and, finally, pendants with a drilled hole were made from six canines and four phalanx bones.

At the Vladychino settlement (data are available only for the year 1974; see Fig. 1), which was situated close to the previous site on the opposite shore of the River Pra, 55 bear bones out of altogether 12,600 bones (including mammal, bird, and fish bones) were obtained (Andreeva 1974b). Here, the bear bones were less numerous than the elk, marten and wild boar bones. In this brief osteological report, E. Andreeva mentions the similarity between both sites in the composition of mammal osseous remains, but points out the small number of broken bear bones. Thus, according to the presented osteological data, though it is quite old, random, and covers only a part of each site, the bear was definitely hunted. It was consumed and its bones were used for the making of a wide range of tools and ornaments.

A reasonable question can be asked: Was the elk the most desired hunting prey for the Mesolithic forest zone hunters, being able to supply household requests as regards food, hides and the raw material for tools? The answer comes by way of an example from Inuit ethnography: It turns out that brown bear fur and skin were believed to be extremely precious due to their warmth (bedding) and durability (boat coverings, skin ropes, skins with fat for boat construction), respectively. The bear guts used for parkas were able to repel water, and for this reason they were appreciated more than seal guts (Fienup-Riordan 2007). Thus, many products from the killed bear had unique qualities that were superior to those provided by elk and other hunted mammals. It seems that these particular features influenced in many ways the complex of rites, beliefs, and restrictions connected with the brown bear, which are widely known ethnographically.

Some categories of tools made from bear bones have already been mentioned above. The studies of bone implements from the East European Plain forest zone Mesolithic/Neolithic collections were rarely aimed at distinguishing which particular mammal species provided the raw material for one tool or another. Let us hope that soon studies will appear that analyse these bone tools in a more detailed way. At present, only random examples can be observed from the neighbouring settlements of Shagara II and Velikodvorye I (Ryazan and Moscow regions; see Fig. 1), situated not far from the two earlier-described sites with osseous collections within the same lake system and containing even richer osseous collections than those described. The third settlement of Volodary (Nizhniy Novgorod region; see Fig. 1) is situated apart from the other settlements in the Volga river basin. All these settlements belong to the same chronological phase of the Volosovo culture, dated approximately to 3500–2700 BC. In all given cases, we have no further information about the exact settlement context of the bear bone finds, thus we can only speculate that these were items that had probably been lost, or maybe deliberately hidden in a dwelling. They are published here for the very first time.

One of the most frequent ways to make a bear canine pendant was by drilling a hole. At the same time, fastenings that consisted of carved, interlocking notches existed (Fig. 5.1–2). Another puzzling case is the canine with its root deliberately sawn off for an unknown reason (Fig. 5.3). And finally, a unique example is represented by an awl, found at Volodary, made of a horizontally-split bear canine with its tip sharpened and bearing visible traces of polishing (Fig. 5.4). Considering the widely-shared notion about the ritual role of bear canines as a part of garment decoration with deep spiritual value and meaning for the forest Mesolithic/Neolithic hunters, which seems to be generally difficult to decipher (see e.g. Larsson 2006, 281), the last example points at the quite profane function of a bear canine, obviously chosen because of its potential to be fashioned into an awl.

The presence of bear baculum bones in the settlement layers of Shagara II and Velikodvorye I is evidenced by three items (Fig. 5.5–7). Two of them are unmodified (Fig. 5.5–6), but the last one has a wide, drilled hole in the bottom part and a broken tip that bears traces of heavy polishing (Fig. 5.7). Probably, the latter was used as an awl, and the hole was made for fastening. The only similar piece

known so far comes from the Early Neolithic (burial 3 in Kubenino, Arkhangelsk region, around 4900 cal BC), where it was a part of a necklace-like set of five items that included bone tools and a sculpted pendant (Kashina et al. 2021, 81). The modified baculum from Shagara II (Fig. 5.7) can be recognised in parallel with the canine-awl item from Volodary (Fig. 5.4) as a profane household tool made of the suitable raw bone that was close at hand at that moment.

As we finish this section and start with the bear bone burial finds, we argue that, judging by the given examples, the meaning of the bear as an extremely special and sacred animal should not be exaggerated. Despite all the difficulties and risks accompanying the bear hunt, reasons of economy and convenience might have played a role in the use of bear bones, and the bear was definitely not a taboo animal.

Bear remains in burials

Let us now turn to the more "traditional", ritual perspective, from which the role of a bear has been more frequently observed in the world of prehistoric hunter-fisher-gatherers; in particular, to the position of the bear and its faunal remains in the Early to Middle Holocene hunter-fisher-gatherer burial practices. Before proceeding to examine the particular cases and local developments of the use of bear remains in mortuary rituals, it is important to give a brief overview of the East European Plain forest zone burial practices as such.

The Early to Middle Holocene burials in the East European Plain forest zone are characterised mostly by solitary inhumations; however, partial and full cremations also took place (Stokolos 1984; Kazakov 2011, 29). Moreover, based on the lack of burial remains in some large-scale areas, such as the Middle Volga, we may assume the practice of archaeologically invisible burial forms and/or very moderate archaeological surveys and excavations in the area. The bodies were buried with and without post mortem manipulation of the corpses. As for the body positioning, stretched supine and crouched on one side are among the most common positions of the inhumations; however, the diversity of funeral rites depended on the chronological and geographical frame and some other variables. Therefore, such positions as stretched prone, sitting or standing as well as burials of separate body parts could also have been a choice of the Early to Middle Holocene hunter-gatherer-fishers. The deceased were buried without burial goods or, contrarily, equipped with tools, personal ornaments, weaponry, objects of art or faunal remains. Burials containing osteological remains of bears were also detected.

In regard to the collection of data, the present study employs published and unpublished (archive) sources as well as material from selected archaeological collections (Sakhtysh, Volodary) to analyse the role and specificity of the use of bear remains throughout the time span in question. The majority of the unmodified bear remains were not taken into collections after the excavations (besides the bear metacarpals from Sakhtysh II), therefore their description is based on published and archive sources. Difficulties in the records of bear remains and their association with graves emerge due to the location of a large number of the burial sites in sandy soils, which in many cases hinders the detection of grave borders. Another noteworthy aspect is the position of many burial sites within the multi-period settlements (e.g. Berendeevo I, Yazykovo I, Maslovo Boloto V, etc.), which can have obstructed the chronological and cultural identification of objects and led to post-depositional alterations, such as random artefacts that have fallen into a grave from the settlement layer. Hence, our database attentively takes into account the spatial and stratigraphical distribution of the artefacts and their association with the graves.

The first question aimed to detect the difference between the use of bear osteological remains at settlements and burial sites. A comparison revealed that bear faunal remains observed within the

burial contexts differ in most cases in their concentration and representation from those found within the settlements. In particular, among the remains found within the Early to Middle Holocene burial sites, bear teeth, skulls, metapodiae, phalanges, and metacarpal parts are the most frequent. Other skeletal parts were rarely used.

The second set of questions aimed to identify and attempt to explain possible variations of burial contexts in which bear osteological remains were involved. Our dataset demonstrated that some remains were placed within the graves, but other bear bone finds, such as solitary bear fangs, bear jaws, phalanges and, rarely, skulls, occur outside the burial pits, not as stray debris but as a part of other burial ground objects, represented for example by the clusters of various bear bones, or even bear skulls that are accompanied by artefacts or deliberately placed over them (Kostyleva/Utkin 2010, 30). The known differentiation in these burial contexts might indicate the various actions and specific behaviour within their background (Figs. 6–7).

As shown in Figure 7, both modified and unmodified bear remains can be detected *inside the graves*. Let us now consider these cases more closely. The unmodified bear remains found inside the graves derive from 13 burials at the following sites: Chornaya Gora, Ksizovo 6, Sakhtysh I, II, Vasilyevskiy Kordon 17, Volodary, Yazykovo I, and Yuzhniy Oleniy Ostrov (Figs. 6–7). Skulls, jaws, incisors, metacarpi, metapodia, and phalanges were placed in different ways – at the feet, close to the head, slightly above the corpse, or were found somewhere else among the bones of the deceased. An interesting observation is that the last pattern is traced in collective burials, where the human bodies had usually undergone a great deal of manipulation (Chornaya Gora, grave 50; Volodary, grave 7).

Thus far, the following peculiarities of location and choice of unmodified bear bones can be identified:

1) All graves that contain bear bones belong to the Final Neolithic Volosovo culture, with the exception of Yuzhniy Oleniy Ostrov (Final Mesolithic) grave 116, which contained a bear jaw inside the grave, and grave 132, which contained some bear bones;
2) sometimes various selected skeletal parts were found near each other (e.g. jaws/metacarpi or phalanges/metapodia), in other cases only homogenous skeletal parts were placed in a grave, for example, bear skulls;
3) in all cases, jaws and metacarpi were the most frequent finds.

Bear teeth without any fastening elements that had been placed inside graves prompt the question of how the teeth were attached to clothes or other items. Maybe some sort of adhesive of animal, fish, or plant origin was used. For instance, at the Yazykovo I site (grave 2) the unmodified bear teeth were arranged in a row along both thigh bones (Kostyleva/Utkin 2010, 158). Cases of animal tooth pendants placed in a row together with unmodified teeth, found in the Mesolithic-Neolithic Zvejnieki burial ground, were also analysed by Larsson (2006).

Regarding the modified bear remains found inside 74 graves, these are represented by bear incisors, fangs, and a phalange (as in the unique case at Yuzhniy Oleniy Ostrov, grave 125), placed in a particular order, most frequently on the body or in its close vicinity. Modified bear remains were detected at the sites of Chornaya Gora, Minnyarovo, Sakhtysh II, IIa, Shagara I, Yazykovo I, and Yuzhniy Oleniy Ostrov (Fig. 7).

Our observations found that when represented in clusters or arrangements, the ornaments were concentrated either along the lower limbs or in the pelvic area; in the arrangement, the modified bear teeth were combined with teeth of other species or represented exclusively. Different techniques were applied to modify the fastening at the proximal part – grooving around, grooving partially, grooving together with a hole drilling, drilling only, modifying from both sides (making the proximal part either slightly or considerably thinner) and then drilling, and cutting off the proximal tip (Fig. 8a). Among these, the tendency of a more frequent use of the grooving technique in the Late Mesolithic materials and the almost complete replacement of it by the drilling technique in the Late Neolithic were detected.

We now move on to observe the osteological remains of bears found *outside the graves*. Analysis shows that there is only one case, Minino 2, that represents objects with modified bear remains outside the graves (teeth pendants placed in the pits; see Sorokin/Hamakawa 2014, 71). Another 11 cases of bear remains found within the cemetery but outside the graves derive from Berendeevo I, Karavaikha, Maslovo Boloto V, Popovo, Sakhtysh II, and Volodary. These include unmodified remains, such as skulls, jaws, metacarpi, pelvic bones, sternum, and other post-cranial parts, which occur singly as well as accompanying a cluster of artefacts or other faunal remains (e.g. Oshibkina 2016, 798–799).

Some of the most remarkable features with osteological bear remains found outside the graves come from the Sakhtysh II site. In one case, the cranial and postcranial parts of two bears were located in the vicinity of grave 4; in two other cases, bear front limb bones – long bones in the so-called "ritual hoard" 1 and metacarpi in "ritual hoard" 10 – were placed in anatomical order over a cluster of artefacts (Fig. 8b). Finally, the bones of a bear paw were found in a cluster, among burnt faunal remains and artefacts ("ritual hoard" 12; cf. Kraynov 1988, 38–44). The term "ritual hoard" refers to a cluster of artefacts and faunal remains, as found within the Volosovo burial sites (3500–2700 cal BC); often they were deliberately placed in a pit, sometimes they were covered with ochre, were broken, and had undergone thermal treatment.

To sum up, within the Early to Middle Holocene burial sites in the East European Plain forest zone bear remains were represented in both modified and unmodified form inside as well as outside the graves. There is always the methodological uncertainty that items can have accidentally ended up in a grave or cemetery sediment. However, it has been established that bear remains are relatively rare in Mesolithic/Early Neolithic burials and are usually represented by teeth, thus they could have been used as a part of burial garments, adornment sets, or other items required to furnish the grave, such as blankets, shrouds, bags, quivers, or other accessories. A large increase in bear bone remains in burials and grave-side ritual objects is recorded in the Volosovo period (around 3500–2700 cal BC), when there was a marked rise not only in the number of objects but also in the variety of skeletal parts of bears involved in the rituals and the ways they were represented across the cemeteries.

Discussion

After having analysed the bulk of sources concerning the bear image in portable and rock art, as well as bear remains in settlement and burial contexts, we can conclude that there is an imbalance among the analysed groups of archaeological finds. Being strikingly rare, in fact almost invisible, in the portable art from the Mesolithic/Neolithic, the bear image was increasingly used in different spots of the forest zone close to the start of the Bronze Age, revealing itself in wood (ladles), bone (pendants, spatulae, spoon), and flint sculpture as well as later, in the 3rd and 2nd millennia BC, as a sculpted decoration of ritual stone axes, which were widespread in Scandinavia and the Russian North. The bear image is completely absent among the sets of the Neolithic ceramic sculptures of the Comb and Comb-Pitted Ware cultures, while such species as waterfowl, beaver, elk, and snake are represented there (Kashina 2007). These images have constantly occurred in the other groups of portable art at least since the Final Mesolithic, but the brown bear has not. In fact, we could suspect that a bear-sculpture representation was a kind of taboo for a long time.

The most interesting fact is that the bear image then appears on items that already existed in the 4th millennium BC (wooden ladles, bone spatula, and carved pendants/flint sculptures), but which had previously depicted other images, such as waterfowl (ladles/spatulae) and human/waterfowl/snake/elk/beaver (pendants). The figural axes normally featured not only bear but also elk heads, the peculiarities of which visibly echoed the iconography of the antler elk-head staffs, known since the end of the 7th millennium BC.

As for the petroglyphs, which unfortunately are not dated as precisely as the objects of portable art, the bear image is very rare in most of the rock art groups. This feature, as well as the intention to portray bear traces and dens instead, can be interpreted as an attempt to elude the bear image itself while dropping hints of its presence. Quite the same conclusion can be derived from the Mesolithic/Neolithic burial and grave-side contexts with their bear tooth pendants, skulls, and especially paw bones. At the same time, it contradicts the universal recognition of the bear as a much desired and honourable hunting prey, and relevant scenes of bear hunting do exist on petroglyphs as well. The settlement cases that we cited here, together with the Inuit example, stress the economical need for the bear (which was probably even essential for survival) in the boreal prehistoric and indigenous communities.

Osseous remains of bears in burials represent an ambiguous data set, because the organic materials survive quite randomly in the East European forest zone territory. The situation of cemeteries at the same spots as the multi-period settlements has also to be considered. Nevertheless, the known abundance of bear bone finds at the cemeteries of the Central Russian Volosovo sites, together with some rare portable art pieces representing the bear in flint and bone, deserves further attention to study the supposed shifts in Final Neolithic/Bronze Age spirituality.

Conclusion

In the territory of the East European forest zone Mesolithic/Neolithic, the general development of bear depictions over the millennia was as follows: Hunter-gatherer-fishers rarely depicted the bear (perhaps it was a kind of a taboo) but hunted it, consumed its meat and used its bones in households and rituals. The bear image at last gradually appeared in portable art on the turn from the Stone to the Bronze Age. The Bronze Age of the huge territories of the northern latitudes of Russia is understudied, and the main differences from the more southern territories are the very moderate amount of metal finds and the seeming absence of animal husbandry and agriculture. Nevertheless, the migration of the Corded Ware derivates definitely influenced the ceramic traditions of the local hunting communities all over the East European Plain forest zone and was probably the initial cause of the spread of the bear image, at least in portable art, and, later, the spread of figural axes, of which those that are known feature the bear head but were found outside the frames of the Corded Ware culture areas. Recent analyses of genetic data suggest that there was almost no admixture between hunter-gatherers and herders on the East European Plain. The clearly observed increase in the bear image in portable art provides evidence of interactions between hunter-gatherers and herders, probably since the herders' first appearance in the forest zone. Their presence lasted for about a millennium and could have caused some ideological changes that were also reflected in the material culture of the hunters.

The brown bear definitely played one of the key roles in the mid-Holocene forest zone societies' spirituality and livelihood, but its representations are rarely met until the turn from the 4th to the 3rd millennium BC, the time period of the turn from the Stone to the Bronze Age. Also, the bear was constantly part of the prey, not only in prehistory but during following epochs as well, and definitely had a recognised place in pagan mythology and folklore.

Acknowledgements

We are grateful to Dr. Pavel Kosintsev for the zooarchaeological consultation, to Dr. Roman Smolyaninov and Dr. Elena Kostyleva for the permission to use the burial data obtained in the Lipetsk and Ivanovo regions in our study, to Ville Mantere and Dr. Aleksandr Zhulnikov for the consultation

on the figural axes topic, to Aija Macāne, to Dr. Arkadiy Korolev, to Dr. Mark Shakhnovich, and to Normunds Grasis for the permission to publish particular photos, to Dr. Oliver Grimm for his kind invitation to participate in this volume, and finally we want to express our gratitude to the reviewers.

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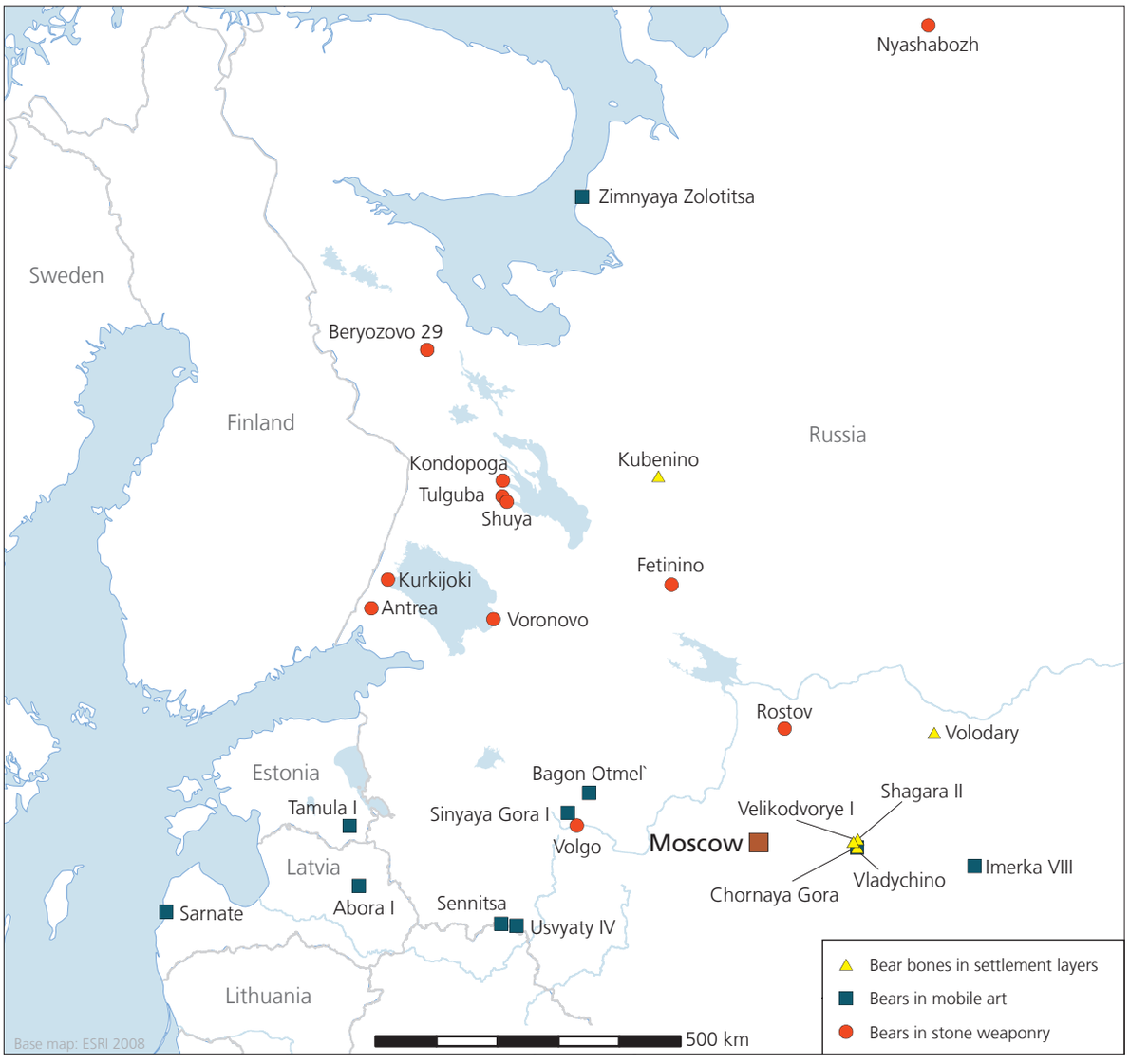


Fig. 1. Distribution of sites mentioned in the text with different categories of items connected with the bear (map GIS department, ZBSA).



Fig. 2. Carved bear images in portable art. 1; 3: Usvyaty IV, Pskov region; 2: Sārnate, Latvia; 4: Abora I, Latvia; 5: Imerka I, Republic of Mordovia; 6: Chornaya Gora, Ryazan region; 7: Tamula I, Estonia (photos E. A. Kashina [1–4; 7], A. Korolev [5], A. Macāne [6]). Objects 1 and 3 © The State Hermitage Museum, St. Petersburg (Russia).



Fig. 3. Flint bear images in portable art. 1: Zimnyaya Zolotitsa, Arkhangelsk region; 2: Bagon Otmel', Tver region; 3: Sinyaya Gora 1, Tver region (photos I. Seden'kov, State Historical Museum, Moscow [1–2], E. A. Kashina [3]).



Fig. 4. Axes with bear heads. 1: Nyashabozh, Komi Republic; 2: Volgo, Tver region; 3: Beryozovo 29, Republic of Karelia (photos I. Seden'kov, State Historical Museum, Moscow [1–2], M. Shakhnovich [3]).



Fig. 5. Bear canines and baculum bones found in settlement layers. 1, 4: Volodary, Nizhniy Novgorod region; 2–3, 5: Velikodvorye I, Moscow region; 6–7: Shagara II, Ryazan region (photos I. Seden'kov, State Historical Museum, Moscow).

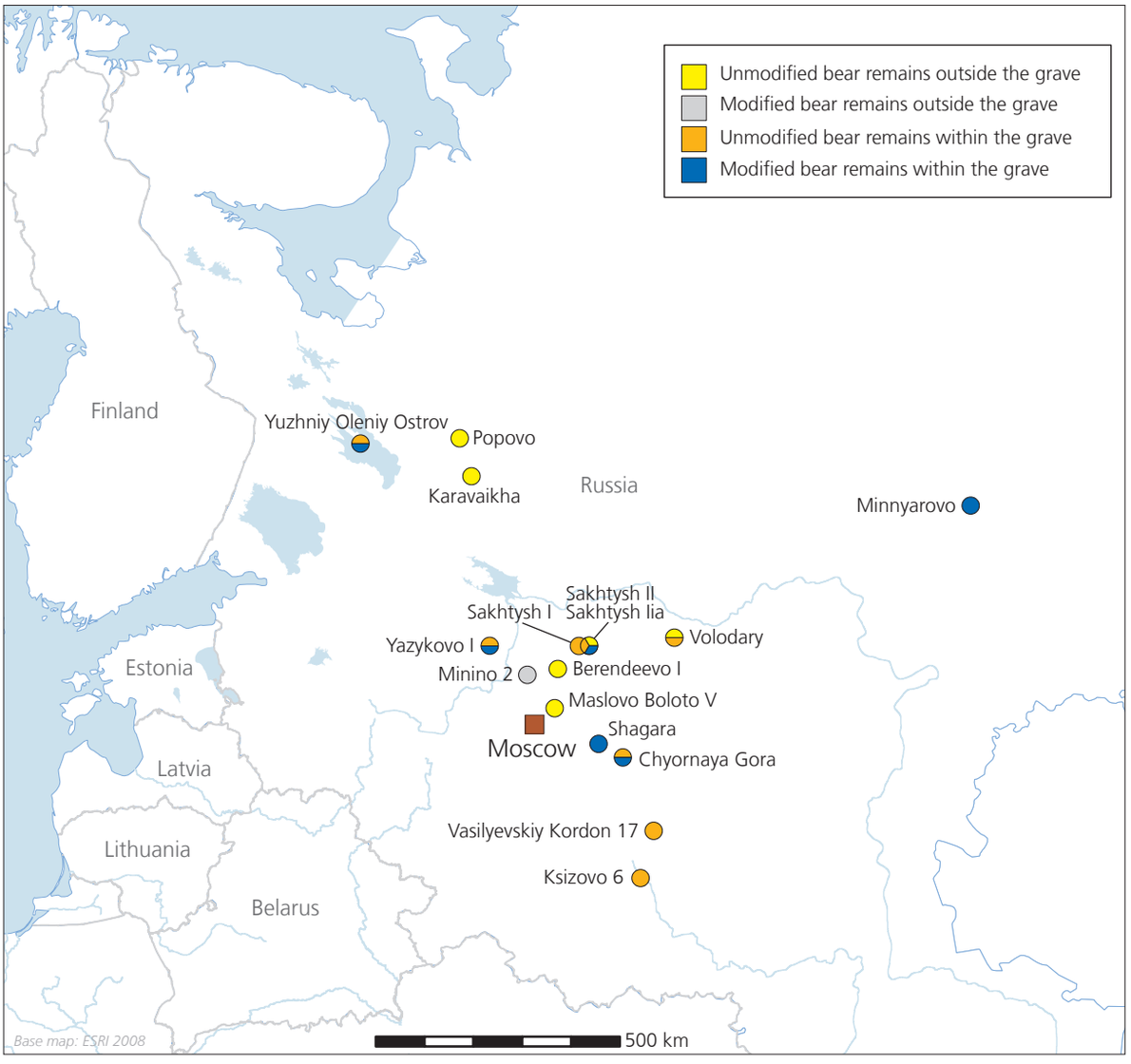


Fig. 6. Early to Middle Holocene burial sites with bear remains within (map GIS department, ZBSA).

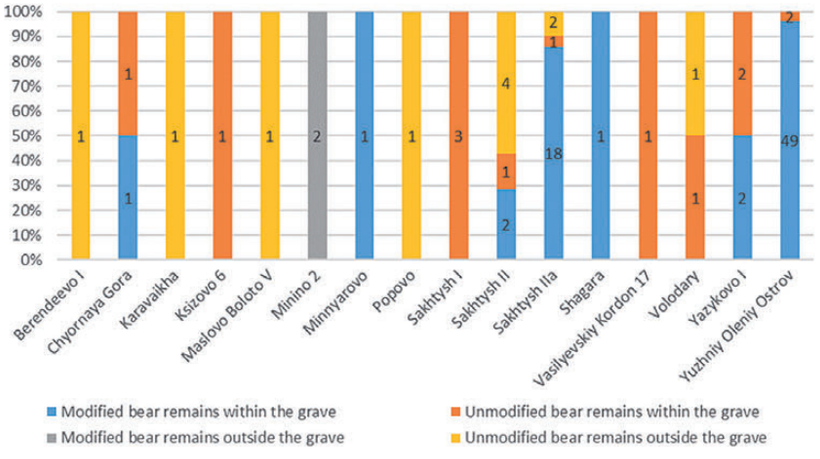


Fig. 7. Distribution of bear remains within the cemeteries (number of items).

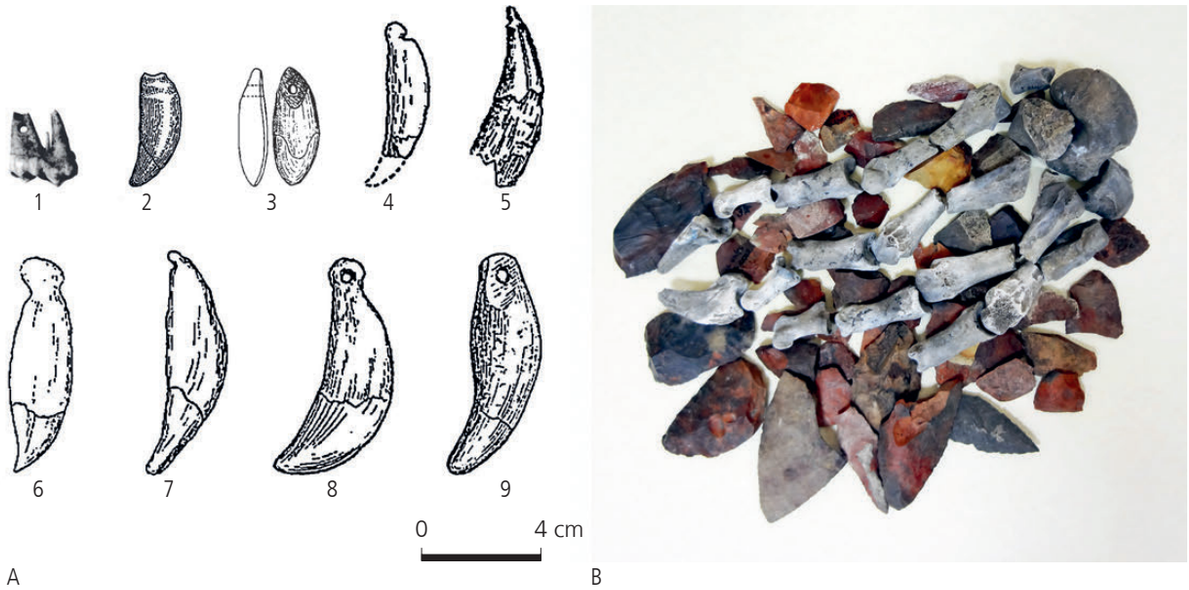


Fig. 8. a: Various methods of bear tooth pendant fastening (after Gurina *1956;* Kazakov *2011;* Kostyleva/Utkin *2010) – 1: Sakhtysh IIa, grave 7b; 2: Minnyarovo; 3: Sakhtysh IIa, grave 64; 4: Yuzhniy Oleniy Ostrov (YOO), grave 9; 5: YOO, grave 46; 6: YOO, grave 4; 7: YOO, grave 151; 8: YOO, grave 114; 9: YOO, grave 100; b: The "ritual hoard" 10, Sakhtysh II, Ivanovo region, in form of the installation exhibited at the Archaeological Museum of the Ivanovo State University (photo A. A. Khramtsova).*

Bears in archaeo(zoo)logical, focused analysis (northern Europe)



The burial of the Krosshaug petty queen, with the deceased placed on a bear skin, from the Migration Period of southwestern Norwegian Rogaland (see Grimm, Bear skin burials, this volume; image © E. Gjerde, The Museum of Archaeology, University of Stavanger, Norway).

The White One: How to frame the narrative of the world's oldest intact polar bear skeleton, specimen S10673 from Finnøy, southwestern Norway, in a museum display

By Kristin Armstrong Oma and Elna Siv Kristoffersen

Keywords: Polar bear, animal remains, museum display, museum studies, Norway

Abstract: Once upon a time, in the white wilderness, a white bear lumbered along close to the coastline. Twelve thousand four hundred years later he was found under the floor of a laundry room. His remains were excavated and brought to the nearest museum, at that time called The Museum of Archaeology in Stavanger. This article discusses the various narratives that surround the polar bear, ranging from what can be glimpsed of his life to his role in the scientific narrative, the story of how he was discovered and excavated, and how the public has engaged with him. Finally, the article discusses the ethics of exhibiting human and animal remains and how museums can be arenas for reflective practices. The role of a museum is to disseminate the multi-layered story of this polar bear; a story that starts with a once living, breathing creature that roamed the icy landscape at the decline of the last glacial period, and the ensuing biography of his skeletal remains – as well as their scientific value. Here, we unpack these stories and examine them in the light of museum practices, both regarding dissemination strategies and collection strategies. How are historically-embedded, ontological rationales active in steering the slant of the story as regards how museums organise their collections and make the collections come alive by creating narratives for them? And how do the different stories, related to the polar bear itself, combine into a charismatic story?

Introduction – three polar bear stories

It could begin like this: Once upon a time, in the white wilderness, a white bear lumbered along. He was large and looming, but the vastness of the snowy landscape left him barely discernible. The wind whistled and howled, and the icy whiteness on the ground was so white it glimmered as though bright blue. The desolate landscape did not hold many beings. Yet. The white bear felt a change was in the air; there was an unknown smell of an ancient fear – fire. But also something even stranger; far away, a speck of yellow, movement. His hackles up, he walked backwards and turned towards the edge of the ice and slipped silently into the big blue.

Or it could begin like this: In the summer of 1976, Sverre and Reidun Asheim started digging out the foundation for their new basement on their property on the island of Finnøy, in the county of Rogaland in southwestern Norway (Fig. 1). Strange, large bones emerged, yellow with age, larger than human and even cattle bones (although they were deemed initially to be bovine remains). The bones were kept in a box for some years until, as chance would have it, a boy visited a Stone Age excavation

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 317–334 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134339

hosted by the Museum of Archaeology and suggested to the archaeologist that these bones might be of interest to the museum. Geologist Hanne Thomsen, one of the excavators and a researcher who was to be involved with the project, was alerted to the find and was eventually able to carefully excavate the remaining bones and bring them all to the museum (Kristoffersen 2017).

Most often, however, the story begins like this: *Ursus maritimus* Phipps is a subspecies of the taxon *Ursus* and is a large, white bear, singularly adapted to life in the Polar regions. It is currently classified as a vulnerable species, due to climate change (Molnár et al. 2020). The oldest known almost complete, well-preserved specimen was found in southwestern Norway in 1976 and was a male, specimen S10673 (Blystad et al. 1983). He has come to contribute to the understanding of the development of the polar bear and is mentioned in various articles on the development of the species (e.g. Ingólffsson/Wiig 2008; Bachmann et al. 2013; Wiig et al. 2015). An almost complete skeletal polar bear is an exceptionally rare find, since polar bears live and die on pack ice and sink to the bottom of the sea when they die, from whence their bones are hardly ever retrieved (Bachmann et al. 2013). The skeleton of this bear is thus an extraordinary find and a very important missing link in polar bear research. The find site is, however, far from what would, today, be a natural habitat for a polar bear. Situated in southwestern Norway, Finnøy is one of the outer islands in the Boknafjord in Ryfylke and is currently in a temperate zone where temperatures seldom drop beneath 0° Celsius in winter. The island is part of Stavanger municipality, with a size of 104 km^2. Currently, it has some 3,000 residents, with Judaberg its only town.

All of these narratives are equally relevant and reveal aspects of the near-complete Late Weichselian polar bear (*Ursus maritimus* Phipps) skeleton, which has been dated to 12,400 BP (Kristoffersen 2017, 15–17); each story is singularly accurate and relevant within its context. In chronological order, they present particular points of time that are embedded in the remains of this polar bear. From the elemental beginnings of the polar bear immersed in the ice and sea of the Weichselian period to the elaborate scientific description, they present a brief history with a huge time-depth. For the polar bear, at species level there is a development from a perfectly suitable environment with plentiful space, sea, ice, food, to being driven far north, pushed to the last frontiers of ice, threatened by extinction and in dire straits. Also, they reflect the presence of human beings in a specific place but over a long period of time, with their wide diversity in human experience, knowledge of the world and the language to describe it; humans who range from a few human pioneers following the retreating edge of the ice to a well-developed civilisation, represented by the couple who wanted to expand their living quarters and the scientists who studied the remains of the bear.

The role of a museum is to disseminate a fundamentally multi-layered story. This story encompasses different layers of material studies, and includes the bear remains and their geological, geographical and archaeological contexts. The story originated with the bear himself – a once living, breathing creature that roamed the icy landscape at the decline of the last glacial period – and the ensuing biography of his skeletal remains – as well as their scientific value. In this article, we will unpack these stories and critically examine them in light of the museum practice of the Museum of Archaeology at the University of Stavanger. Our study includes dissemination strategies and collection strategies. The main question we wish to raise is: How are historically-embedded, ontological rationales active in steering the slant of the story as regards how museums organise their collections and bring them to life by creating narratives for them? And how do the different stories, and the polar bear itself, combine into a charismatic story?

The science story I. Species specificities: A highly specialised seal hunter on sea ice

Living in a polar environment requires the development of specialised behaviours and biological traits. Polar bears are well protected from cold temperatures thanks to their dense, multi-layered coat of which every hair is translucent, with no pigment. Their dark skin and thick layer of fat, the fur on their feet, their small, round ears and the short tail are engineered to retain body heat, and the long, narrow skull warms the air as the bear breathes. They are excellent hunters because they have enormous strength, white fur that blends seamlessly with their surroundings, a long muzzle that gives them a superb sense of smell, long claws that give them a good grip on their prey, broad feet that allow them to walk on thin ice, and they are fast, excellent swimmers (Massimi 2012, 30–39).

Polar bears are the most important predators in the arctic ecosystem. They are amongst the largest carnivorous mammals in the world and can survive by going without eating for long periods if they must. In comparison, the brown bear only fasts when it goes into hibernation in winter. Polar bears have four teats, unlike the brown bear's six, and the females have smaller litters. They have been regarded as the friendliest of all bears – sociable, curious, and endlessly patient (Massimi 2012, 30–39).

The science story II. A polar bear skeleton from Late Weichselian marine sediments

An almost complete, well-preserved polar bear skeleton, *Ursus maritimus* Phipps, was found in 1983 in Late Weichselian marine sediments on Finnøy, southwestern Norway (Blystad et al. 1983). The bones belonged to a large, 26–30-year-old male, ^{14}C-dated to 10,660 ± 80 years BP. In 2017, the date was collated using OxCal 4.3, and the more precise date is now 12,050–12,600,[1] i.e. *c.* 12,400 BP. The find has unequivocally shown that polar bears were present in the high arctic marine environment in southwestern Norway at the very end of the Ice Age.

Only bones from the fore limbs, a few vertebrae and most of the toes and fingers were missing. The polar bear was identified as a male through a completely preserved penis bone. Judging by the size and development of the bones, he was large and fairly old. A preliminary study of the structure of one of the canine teeth indicated an age between 26 and 30 years, which is quite high for a polar bear.

Fossil finds of polar bears in former glaciated areas are extremely rare. This can, at least partly, be attributed to the fact that polar bears for the most part live and die on pack ice, where upon death their remains slip into the ocean and become sedimented in the sea bed at great depths and in inaccessible Arctic areas, which makes their preservation in terrestrial sediments exceptional (Ingólffsson/Wiig 2008; Bachmann et al. 2013). When polar bear fossils are located, often only single bones or bone fragments have been found. The nearly complete and well-preserved skeleton from Finnøy must, therefore, be regarded as sensational.

The find was first published in a note in *Norsk Geologisk Tidsskrift* (Blystad et al. 1983), later in two museum catalogues (Thomsen 1985; Kristoffersen 2017) and, due to how rare and important it is to the understanding of the development of the polar bear, it is mentioned in various articles on this topic (e.g. Ingolffsson/Wiig 2008; Bachmann et al. 2013; Wiig et al. 2015). The bear has thus become a very important specimen for research on the evolution of polar bears.

1 Thanks to Professor Jan Mangerud, Department of Earth Science & Bjerknes Centre for Climate Research, for carrying out the new correlation together with Asbjørn Simonsen.

The ancestors of bears were carnivorous predators, but at some point they transitioned to an omnivorous diet. This change can be read from the evolution of their dental characteristics; rounded cheek teeth are found in omnivores and herbivores rather than the sharp cheek teeth found in carnivores. The extinct cave bears mostly ate plants and had rounded cheek teeth. In contrast, polar bears are characterised by sharp cheek teeth due to their specialised adaptation to a mostly carnivorous diet, although they have also been observed feeding on seaweed in times of need (Balto 2020). But rather than having the dental characteristics of predators, polar bears have teeth shaped like those of other bears, only with sharper edges. Such morphological changes can happen relatively rapidly, and fossil specimens from transitional phases in periods when such radical changes happen are rarely found. The polar bear from Finnøy has turned out to be just such a transitional specimen. His cheek teeth are more primitive, rounded and gnarly compared to those of present-day polar bears. This demonstrates how the polar bear has changed noticeably over the last 13,000 years.

The evolutionary histories of the brown bear and the polar bear are interlinked, and they successfully produce fertile offspring (Ingólfsson/Wiig 2008, 455). Dental characteristics such as rounded or sharp cheek teeth indicate whether they are one or the other. However, in times of upheaval and climate change their interbreeding has assured the survival of the species and also led to morphological changes through time, as several changes in climate and thus living conditions drove brown bears and polar bears either together or apart.

The Finnøy bear lent his mandible to the research on the Late Pleistocene polar bear fossil found on the Poolepynten on Svalbard, the oldest remains of a polar bear ever found (130,000–115,000 BP; e.g. Ingolfsson/Wiig 2008; Bachmann et al. 2013; Wiig et al. 2015). Measurements of the Finnøy mandible were, together with a Danish find from Asdal, in Vendsyssel on the northernmost part of Jutland (Aaris-Sørensen/Petersen 1984), compared with the one from Poolepynten and were crucial to its sex determination as a male. Having its penis bone intact, there is no doubt about the sex of the Finnøy bear. The comparative study of him as well as other available subfossil polar bear remains also revealed that there was no significant change in the size of polar bears during the Late Quaternary (Ingólfsson/Wiig 2008, 455, 458, 461).

The polar bear has become a symbol of the debates concerning the effect of climate change in the Arctic, and these rare, ancient finds play a significant role in this regard. The Poolepynten bear, in particular, has contributed to the understanding of the consequences of the survival of this species, by comparative analyses with other polar bears and brown bears. New molecular methods have demonstrated a close kinship between these subspecies of bears as well as a large genetic variation within brown bears (Miller et al. 2012). The so-called ABC bears that have lived in relative isolation in Alaska (a genetically isolated population of brown bears from the Admiralty, Baranof, and Chichagof islands in Alaska's Alexander Archipelago) are particularly similar to polar bears. In fact, the Poolepynten bear is equally similar to the ABC bears as regards current polar bears, even though his appearance and jaw were similar to that of a polar bear. These studies have provided fresh insights into the development of species that live in extreme habitats and their adaptation to changing climates and can therefore be used for future projections of the fate of polar bears by modelling different climate change scenarios (e.g. Molnár et al. 2020).

Analyses of ancient DNA, inherited through both patrilinear and matrilinear descent, have indicated the age of divergence of the polar bear as a species, with an initial split around 4–5 million years ago, and "since their divergence from brown bears, polar bears have embarked on their own evolutionary pathway and developed their own unique genomic signatures" (Miller et al. 2012). Having said that, there is evidence for a successful admixture between species at several points in time, at both 600,000 and 3–400,000 years ago at the least. Only successful breeding between a polar

bear female and a male brown bear can explain these divergent splits between the species. Therefore, it seems that a hybridisation between the polar bear and the brown bear has happened on several occasions during the Pleistocene, and the latest such significant event probably took place around 150,000 years ago (Edwards et al. 2011). Large-scale climatic changes during the lifespan of polar bears have led to shared habitats and thus the potential for interbreeding and hybridisation in periods with warmer climatic conditions. This is also happening in our time. The polar bear has evolved to singularly cope with an extreme ecosystem and, as such, its survival as a species is not a given unless it is capable of adaptations in the future. The study of how a species has adapted to climatic changes in the past can go some way towards predicting to what extent it is suited to adapt to future climate changes.

In conclusion, recent research demonstrates that, as a species, the polar bear is significantly older than previously thought and that subsequent, frequent hybridisations between the species, including genetic exchange, have happened in several periods when the planet has undergone dramatic climate change, up until recently. Possibly, these hybridisations have ensured the survival of the polar bear as a species during previous climatic changes. The challenge for present-day polar bears might be the rapid pace of the current climate change.

The find story. How the polar bear emerged from under the laundry room

The most important finds often come to light by coincidences. Several random circumstances led to the discovery of the Finnøy polar bear skeleton. The find came to the attention of the scientific staff at the then Museum of Archaeology in Stavanger when an astute and curious boy came to visit a Stone Age excavation in the summer of 1982 in Sandvika by the Gandsfjord in Sandnes municipality. The boy told the excavation staff that "we have some old bones in the basement". During a stressful excavation, most archaeologists would have responded with a polite "Oh, how interesting!" but left it at that. However, one of the field workers was geologist Hanne Thomsen, and her response was: "Do you want me to come and have a look?". And fortunately, she did.

The find story had already started in the summer of 1976, when Sverre and Reidun Asheim dug out the foundation for their house at Judaberg on the island of Finnøy, about 100 m behind the old dairy. When the basement floor had been levelled, they dug a wire into the floor and saw several large bones in the clay. The well-preserved bones were parts of the lower jaw and of the left upper jaw, ribs, two vertebrae and bones from the fore and hind limbs of a large animal. Uncertain of which kind of animal the bones could stem from, they held on to them and put them in a box originally used for margarine. The box with the bones was subsequently gifted to the boy's father, Arvid Magnussen, a family friend with an interest in such things. Eventually the box was placed in the basement, where the boy had his room. When Hanne Thomsen saw them, she immediately realised their potential scientific value and that the bones were worth a closer study. The boy's father brought them to the museum, where it was quickly established that the bones were parts of the skeleton of a polar bear – and that it would have to be very old. After all, polar bears had not lived in the region since the ice retreated, 12,000 years ago.

Two Quarternary geologists and one botanist hurried to Finnøy for a closer inspection of the find site. The owners of the house informed them that there were more bones, but they were currently embedded in the clay under the floor of the laundry room in the basement. The owners permitted the floor to be broken open and donated all bones that were found to the museum.

In the autumn of 1982, an excavation team went to Judaberg to try to retrieve the rest of the polar bear. The team was made up of botanist Asbjørn Simonsen, geologists Per Blystad and Hanne Thomsen from the Museum of Archaeology in Stavanger, as well as zoologist Rolf Lie from the Museum of Zoology in Bergen. Arvid Magnussen contributed as a photographer and local contact.

The excavation was completed during one week in October 1982 and was carried out to a maximum depth of 70 cm below the cellar floor, which corresponded to a height of approximately 14 m above present-day sea level. At the base, there was a compact sediment of stone-rich diamicton. In the central part of the excavated area, there was a layer of sandy, silty marine gyttja of approximately 15 cm. Some patches of organic matter of unknown composition were found at the base of the gyttja-rich sediment. The positioning of the organic patches in relation to the skeletal components suggests they could be the remains of the stomach of the polar bear (Figs. 2–3).

The narrative story: The exhibition

After the fossil polar bear had been brought to the museum, a temporary exhibition was created to present the find, which had already garnered much local attention from the public. The skeleton was reassembled in an anatomically correct way, assisted by Anne Karin Hufthammer, osteologist from the Museum of Zoology in Bergen. Following the temporary exhibition, it ended up in an open showcase on the outskirts of the museum, by the café, and was therefore excluded from the permanent exhibition (Fig. 4). At this location, a short text gave the most rudimentary information about the bear. Without a context, the story and scientific importance of the polar bear was lost. Even so, he was very popular amongst visitors. The public developed a relationship to the skeleton, maybe because of the exotic nature of a polar bear from the Stone Age that was exhibited as an articulated bear standing on his four feet, maybe also riding the wave of popularity and interest that living polar bears attract.

The work with the new, permanent exhibition, which started in 2014, aimed to integrate the skeleton into the main display. The exhibition, currently under construction, is designed as moving backwards in time from one archaeological period to the next, organised as separate modules. It starts in the Middle Ages, presenting societies more familiar to visitors, and extends back through the mists of time, winding back through the cultural history of Rogaland to societies that become increasingly unfamiliar, different and maybe difficult for visitors to understand. The principle underlying this organisation is that knowledge of the past is built incrementally, starting with societies closer to our own – that which is known – and then increasingly adding elements of that which is less well known and also interpretations that rest on less knowledge and stronger uncertainties. The separate modules display artefacts from the collection. The last part of the exhibition features times before human history in the region, and this section starts with the polar bear that lived in Rogaland at a time when there might have been no, or extremely few, humans (see Bang-Andersen 2017). This is then followed by a room centred on the theme "Before the Beginning of Time" and features origin myths from around the world, leading to the final room, "Meet the Humans", in which human remains from all parts of early history and prehistory are displayed. This room is the only place where human remains are exhibited. The remains stem from different contexts and different periods, and the visitors from there walk back towards our time. The remains are not just from burials but also, for example, the bones of a Bronze Age woman found in a bog, the Mesolithic Viste boy found in a shell midden in a cave, infant skulls deposited in a well-spring in the Early Roman Period, and a Viking Period male skull found in layers that were submerged by the sea in the Viking Period. The introduction text invites the visitors to reflect on what it means to be human, both now and then, and the exhibition shows the remains as human beings, rather than as biological data. This was a conscious choice and is reflected in the exhibition design. The module is situated in a separate room, and it is deliberately designed to be a quiet room that displays the remains with dignity, making space for the different remains to be experienced as individual subjects, as once living humans. The room reflects the archaeological find context underground, with darker hues and a wallpaper that evokes a soil profile both by its colouring and its grainy texture.

Work on the polar bear exhibition commenced when the module with human skeletons was finished, and the exhibition design was based on the same principles used for the human remains – to present the bear as an individual and recreate his habitat in order to let his subjectivity and arresting presence shine through. In preparing the exhibition, the original crew who excavated the polar bear skeleton were contacted and quizzed about the excavation process; they were also invited to contribute to the museum catalogue. The find story was pieced together and new and updated research on polar bears became integrated into the exhibition texts and catalogue. The skeleton was also radiocarbon dated as part of the process.

Although we have so far talked about the polar bear as one individual, this is not strictly true concerning the polar bear on display. The find is not entirely complete; some skeletal elements are missing. The missing bones were borrowed from a large polar bear male specimen from the Museum of Natural History in Bergen, specimen B.M.308. This skeleton is undated but is from before 1900. The skeleton that the visitors meet therefore represents two individuals. This is mentioned in the exhibition catalogue but not in the exhibition texts. We have no information about this recent animal – it has been anonymised. Whereas all the bones from the Finnøy polar bear are unmarked, the bones from the other polar bear are meticulously marked (B.M.308 plus subnumber). Only the most observant visitor might make a note of this and wonder why some bones are marked with B.M.308 and some are unmarked.

In his new abode, the Finnøy bear is placed in a separate section of the permanent exhibition. Since the visitor is guided back through the ages, the bear is placed at the very back of the exhibition hall after the Stone Age exhibition. He is placed centrally on the floor, mounted according to biologically correct measures inside a showcase on a platform where the bottom is blue and covered in shards of clear glass, to imitate the sea and ice of his natural habitat (Figs. 5–6). Sound and light effects evoke the freezing tundra, and the light changes between cold tones of blue and green to imitate the *Aurora Borealis*, and the sound of the whistling wind can be heard. In this location, the bear's size and majestic posture are highlighted, as well as his massive jaw and teeth. The exhibition inspires awe, and the bear is given centre-stage; the visitor can walk all around him. The design lends the bear a sculptural quality, resembling an art exhibition. The podium he stands on can be associated with both an altar and a tomb[2] and affords him a commanding presence. Sparse texts on the walls underline this impression; they give glimpses into different layers of the Finnøy bear's story as well as the story of the species, encompassing science and myths, but they are too short to detract attention from the skeleton. Rather than give an exhaustive account, the texts are meant to inspire further reflections, on diverse issues such as life on the frozen tundra during the last glaciation as well as the plight of polar bears today, who are possibly on the brink of extinction. In-depth information is provided by the accompanying museum catalogue (*Isbjørnen fra Finnøy. Rogaland ved istidens slutt*/The Finnøy polar bear. Rogaland at the end of the Ice Age, 2017).

Reaching out

The Finnøy polar bear has, during his 30 years in the museum exhibition, been one of the two most popular exhibits. The other one is the Viste boy – a Mesolithic skeleton of a 14-year-old child, currently on display in "Meet the Humans". The bear skeleton is at the core of many visitor activities, such as guided tours for school children of various ages and a range of activities for families. He is frequently in social media, and he is celebrated every year on the International Polar Bear Day, February 27.

2 Thanks to art historian Dr. Jean Marie Carey for sharing this observation.

Cuddly polar bear teddies wearing a shirt with "Finn" printed on the chest are also on sale in the museum shop (Fig. 7). Our impressions in the following are based on reactions and comments from the public that have been passed on from daily encounters between our guides[3] and the public.

Our intention with this exhibition has been that the Finnøy bear should stand out as a symbol of the effect of climate change and therefore not simply reveal the region's pre-human past; his remains speak to the fragile present circumstances of polar bears and the wider environment, as well as their precarious future and imminent threat of extinction. According to our guides, he succeeds in his mission. It makes an impression on the visitors that he struggled to survive in the same way as the polar bear does today, thousands of years later. He also seems to manage to communicate the changes the landscape went through after the Ice Age, by explaining why the sea has turned into dry land. Large-scale climatic and landscape changes may be better understood through the authenticity of an individual you actually can see and who lived through them. In the same way, as an individual, he seems to contribute to a better understanding of deep time. However, the public meet him in various ways and recognise different aspects of him and his story. Children are perceptive and often notice things differently. A little schoolboy wondered why several bones had writing on them (the museum's numbers), and several children associate the spine of the skeleton with marshmallows. Another child found him "a bit scary".

It is our impression that the bear(s)[4] has been able to reach out to people in his skeletal form in the same way as the Viste boy. Both exhibits share an old age, and they are both authentic individuals. These are qualities that seem to enable them to reach out towards people in various age groups – from small children to grown-ups and often both together as families. It is of importance that the bear was already able to do so from his old place in the café area. Even though he was among people at this location, and sort of partook in activities such as concerts and lectures, the narrow showcase was randomly and not especially favourably situated. This was also the case with the Viste boy, in his old and dusty showcase and its random placement in the middle of the old exhibition. These are facts that might suggest that it is the skeletons in themselves, animal or human, with an agency of their own, that reach out to people and not so much the way they are exhibited. However, the beautiful new exhibit room with the polar bear skeleton on white ice sheet and blue sea bathed in northern light, certainly adds to the visitors' experience and gives them space for reflection. Even though the Finnøy bear is now more isolated, he has a whole room to himself, and we regard his new environment as a more respectful way to exhibit him.

The bear and his story are also well known locally on Finnøy Island where he was discovered. Apart from being old and rare, the history of how he was found has fascinated many, as well as the many coincidences that saved him for the future. People from the island often come to the museum to see him and, in connection with the opening of the new exhibition, the history of the discovery was repeated in the local papers in interviews with the owners of the house where he was found. The bear even entered into the Atlas Obscura[5] with the headline "Now on Display: An Ice-Age Polar Bear Skeleton Found in a Laundry Room. The startling story behind a new exhibit at a Norwegian archaeology museum". Finally, he has become a comfort to tourists who expect to see polar bears in the streets of Norway (an expectation that some still have).

3 The museum guides Ellen Hagen and Heidi Wevle have generously shared their experience from working in the exhibition and meeting the audience for many years and have followed the Finnøy bear from his old showcase to his new exhibit room.

4 Even though we refer to the Finnøy bear as one individual, it is important to keep in mind that the exhibit is in fact a composite of two polar bears.

5 https://www.atlasobscura.com/articles/ice-age-polar-bear-laundry-room-norway.

The charisma story. How a prehistoric bear touches us today

Charismatic and looming in popular culture, polar bears seem to hold endless fascination for humans, and have become a "flagship species" since the beginning of the 21st century – a popular, charismatic species that is currently a rallying point that serves to promote conservation and activism (Flinterud 2013, 204; Lorimer 2007, 919; 2015, 139). The popularity of the polar bear as a charismatic species in recent decades testifies to its agency as well as its ability to evoke something larger than itself, and it becomes entangled in relationships with the scientific community as well as with the public. A prehistoric animal that has existed in various contexts, in the past as a living animal and in the present as a skeleton – albeit as a skeleton that retains the connection to the living animal it once was – the Finnøy bear has, after his death, become entangled in the lives of those who found him under their basement floor, and those who thereafter excavated his remains and brought him to the museum. When found, he entered history anew and re-engaged in social relations of other ages; his biography attained a new layer. Through reincarnations and recontextualisation, an object accumulates an extended biography – "beyond different systems of understanding" (Joy 2009, 541, with references to Gillings/Pollard 1999; MacGregor 1999; Moreland 1999), and the same applies to a prehistoric animal skeleton.

Further, the Finnøy bear engaged the scientists who worked on cataloguing his skeletal elements, who dated him and thus discovered his rarity and subsequently special status in the scientific community. Following this, he worked on the minds and imaginations of those that planned and executed the exhibitions where he is the main subject on display. His legacy continues to weave him into the stories and involvements of the audience who experience him in the exhibition, as a mixture of aesthetics, species specificities, find story and the plight of polar bears today contribute to bring to mind issues such as the freezing Arctic and climate change, the sixth extinction, and the cuteness of polar bear cubs. All of this goes to show that this polar bear has an uncanny ability to enter new relationships and stories, again and again.

Like monuments, animals accumulate biographies from the changes of the world around them and can accumulate lengthy biographies generated by passing through hands and changing spatial contexts (Gillings/Pollard 1999, 179–180). Gavin MacGregor states that prehistoric artefacts "may include a number of resurrections relating to their movement between different ages or different systems of understanding" and stresses the importance of a sensory approach to the study of extended biographies (MacGregor 1999, 258).

Myths, stories and the naming of polar bears in circumpolar cultures testify to their ability to evoke wonder in humans and to the longevity of this fascination. The Inuits' beliefs were based on animism, i.e. that the world and its components, as well as objects, are endowed with spiritual properties and a soul, and the polar bear, named Nanuq, was a powerful animal (Dijkhuizen 2020).

As well as being a "flagship species", the polar bear is currently also perceived as "a signature Arctic species" (Miller et al. 2012, 14295) and has become embroiled in a particular narrative trajectory; that of the threat to biodiversity from climate change. "Because of the uncertain long-term status of the polar bear and its charismatic nature, this species has become a focal point for discussions concerning the impact of global climate change on biodiversity" (Miller et al. 2012, 14296). Dying polar bears have become synonymous with global warming, and polar bears have shifted from iconic symbols of extreme environmental adaptation prior to 1990, to clarion calls that blend the sixth extinction (Kolbert 2014) with climate change (Bachmann et al. 2013; Miller et al. 2012), and function as rallying points for conservationists. For example, the World Wildlife Fund (WWF) frequently uses breathtaking photos of majestic and iconic polar bears to market their campaigns. This has led to critique along the lines of (ab)using charismatic and beautiful animals such as polar bears and tigers to trigger emotional responses, but also to the detrimental effect of other, less charismatic animals, equally in need of protection and conservation (e.g. Lamb 2020).

In a blog post, Gavin Lamb writes: "I see more and more conservationists worry about the possibility that the public's over-appreciation of charismatic wildlife might doom less popular – uncool species – to extinction" (Lamb 2020). The underlying idea is that by connecting with a charismatic animal, a shift in perception happens, and Lamb quotes the words of the founder of Polar Bear International, Robert Buchanan: "The ultimate Connection is when someone is able to look in the bear's eyes. That bear will reach into your heart and your soul, and you are changed forever." For the conservation movement, this is valuable knowledge and can be used to fund the movement. Buchanan goes on to say: "The Connection isn't tree-hugging fluff … it's Marketing 101: Making eye contact with a bear 'screams', as they say in the ad game … It grabs you and touches you on a level beyond intellect, demanding your compassion" (Mooallem 2014, quoted in Lamb 2020, original capitalisation).

Judging by the enormous interest he garnered through his relatively brief life, this is exactly the effect that the Berlin Zoo polar bear, Knut, elicited and that led to his mammoth fandom. This polar bear was born in captivity and abandoned by his mother, and the cute cub soon became a favourite among visitors and, in a short time, a celebrity in his own right. When the German tabloid "Bild" ran a photo feature of Knut from an animal rights perspective, a public demand to free him was born, leading to mass protests outside the zoo and massive media coverage. The phenomenon was dubbed "Knutmania" and lasted until he died at the age of four from an anti-NMDA receptor encephalitis (Flinterud 2013). The enormous public and media interest demonstrate how human minds can literally be captivated by charismatic animal individuals as well as by a whole species.

The Finnøy bear can in some ways be compared to Knut. Clearly, Knut "grabbed and touched" a vast number of humans "on a level beyond intellect". Similarly, the Finnøy bear also engages the public, although not to such a great extent as Knut did. Still, the Finnøy bear has been the most popular exhibit in the museum since he was presented in a temporary exhibition, later moved to more a random location near the museum café, and then placed in his current, elaborately-designed display.

The charisma of polar bears, as well as the changing narratives that have surrounded them, has been explored by artists Bryndis Snæbjørnsdottir and Mark Wilson in their project "nanoq: flat out and bluesome". They tracked 33 specimens of taxidermied polar bears in museums in the UK and photographed them *in situ* as well as documenting their histories and thus encompassing the place of capture or shooting, the name of the person responsible, the nature or purpose of the expedition, the bear's history in captivity and its age at death. Not all of the bears were on display in the museums, the artists also documented bears that were in storage, thus showcasing a behind-the-scenes look at natural history museums. Among the bears, they found a baby bear at Worcester City Museum, which was singled out for a film called "nanoq: the journey". This film documents one part of this project – the transport and installation of ten stuffed polar bears from around the country into the exhibition space at Spike Island, Bristol.[6]

A study of the Finnøy bear from the point of view of charisma allows for an exploration of how qualities of various kinds and degrees, both extended biographies and aesthetics, are able to add charismatic force (e.g. Kristoffersen 2018) not only to an object but, as in this case, to the remains of a once-living subject. Elements that add to his charisma are the circumstances surrounding his find story, entangled with the relationship between finder and find. Furthermore, the Finnøy bear is entangled in extended biographies generated by his participation in relationships of more recent times (see also Armstrong Oma 2018b). It seems that a part of the charisma of these bears – ranging from the Finnøy bear to Knut – is that they become something greater than themselves; a vessel for humans to pour thoughts, ideas and emotions into.

6 https://snaebjornsdottirwilson.com/projects/nanoq/spike-island-bristol-2004/.

The Finnøy bear thus bears a resemblance to other animals on display at museums that have reached an iconic status and garnered a following of their own. Examples range from "Sue the T-Rex" in the entrance of the Field Museum in Chicago to "Hatch the Tudor Dog" at the Mary Rose Museum in the UK, with "his" active social media profile and 2,182 followers on twitter.[7]

The ethics story. Are we getting it right? Conundrums of how to collect, store and exhibit remains

In Norway, the National Committee for Research Ethics has a sub-division dedicated to considerations of how remains should be treated: The National Committee for Research Ethics on Human Remains. The committee handles all types of sampling carried out on human remains. Their remit is to "evaluate the ethical aspects of research where the source material consists of human remains which are in public museums and collections, or which will be found in future archeological and other surveys". However, there is no equivalent committee dedicated to upholding agreed-upon ethical standards for animal remains. Indeed, there is no established standard for how to treat such remains. They are considered as objects and are subjected to the same treatment as other objects in museum collections – thus animal remains are frequently displayed in a manner that might be considered objectionable if they were human remains.

In his blog, "Archaeodeath",[8] Howard Williams has addressed this and concludes that "whether fleshed or skeletal, articulated or fragmented, actual remains or representations, animals from the archaeological record, and in contexts where they are afforded mortuary treatments, still tend to be seen as just 'stuff', adjunct to the human remains and afforded a different social and ontological status in our scientific and archaeological practices and interpretations […]" (Williams 2019). Williams queries the logic of this, particularly considering that, to people in the past, there were no such clear-cut divisions between humans and animals as there are in the present-day western world (see also Armstrong Oma 2018a). Williams concludes by saying: "No, I think ethical practice regarding how we dig, store, study and display, write about and envision animal remains has a wider scientific importance and relates to how we responsibly, openly and fairly treat the traces of once-living things. Are 'humans' special, or should the bones of other mammals, and animals more broadly, receive comparable ethical considerations?" (Williams 2019). Perhaps an apt discussion would be whether animal remains in museums should be repatriated, similar to human remains. They are after all part of the same colonial legacy as human remains in museums, with all the ethically dubious baggage it entails. The Finnøy bear is a local find, even though polar bears are not local to the region today; he still conveys a local story, albeit one evocative of, and relevant to, the current Arctic climate crisis and its political overtures.

This raises questions of whether a standard comparable to the remit of The National Committee for Research Ethics on Human Remains, or at least ethical considerations, should also be implemented for the treatment and dissemination of animal remains. As with humans, the animals that once possessed the bones and body currently in museum care cannot consent to their treatment or to how their remains are exhibited one way or the other. Still, ethical guidelines would safeguard a respectful treatment. Like humans, animals possess agency (see detailed discussion in Armstrong Oma 2018a, 35–50), and their ontological status shifts in current society according to their perceived agency and value.

7 Hatch the Tudor Dog (@HatchTheDog_MR) / Twitter.
8 https://howardwilliamsblog.wordpress.com/.

At the Museum of Archaeology, University of Stavanger, human remains are, as previously described, exhibited in a separate room entitled "Meet the Humans" (Kristoffersen/Armstrong Oma 2016). Rather than exhibiting the remains as scientific data, they are presented as once-living humans, and discussions on ethics leading up to the exhibitions served as a means to safeguard a respectful frame for the human remains. In several cases, this included an exact – as far as possible – representation of their find context, alongside the required micro-environments to safeguard preservation within the exhibition cases, which made a noticeable dent in the budget of the exhibition. The room is furnished not as a tomb but with a wall-paper that looks like a soil profile (stratigraphy) to give a feel for being underground, inside the archaeological context from whence the bones have been retrieved. The choice of exhibiting the remains in a respectful manner was made in tandem with an explicit goal of providing the audience with a frame of reference for considerations of an existential nature, such as what does it mean to be human now, compared to in the past? How do different cultures deal with death and loss?

The polar bear is currently exhibited in a separate space and the environment he lived in has been abstractly recreated by hanging his bones in his true size on top of broken glass, which looks like ice, with white walls illuminated by blueish-green lights and the sound of the whistling wind over the icy tundra. We safeguard the presentation of his individual personality and presence – his agency – by referring to him as "he" and by exhibiting him as an individual rather than as purely scientific data, although the exhibition texts utilise both of these aspects of the bones. We may not be able to claim that we exhibit him as a subject rather than an object, but the locals have given him the nickname Finn, since he was discovered on the island of Finnøy.

As such, the polar bear is, in our slightly rewritten words of Howard Williams, "afforded prominent individual personality and presence in the museum" (Williams 2019). His original life-world is given import and his biography is presented as something that matters, not just as an educational tool but as an all-pervasive part of a fundamentally foreign past, when this part of Norway was on the cusp between the last glaciation and the first Stone Age pioneers.

However, we are culpable of the omission of the fact that, as previously noted, because the reconstructed polar bear skeleton was not fully complete when excavated, bones from another polar bear from Bergen Museum have been added to supplement missing bones. Thus, he is in reality a composite of different individuals, a fact that is currently not relayed to the public.

Further, the polar bear is not the only bear on display in the museum. In the "Meet the Humans" exhibition of human remains, cremation graves from the Late Roman Period (CE 200–400) and Migration Period (CE 400–550) that include bear claws are exhibited. These bear remains have not been afforded the same individual personality and presence in the exhibition set-up, rather they are displayed as grave goods and a result of a human funerary tradition. However, their agency and species-specific bear-ness is disseminated by highlighting the bear's potential cosmological role as animals that hibernate and emerge with young cubs in the spring, thus becoming a symbol of birth and regrowth following death – or in the case of bears, rebirth as reemergence following hibernation.

As part of the dissemination of the polar bear, it was suggested that the museum would purchase a taxidermied polar bear to display in another part of the museum away from the exhibition hall, near the café and the reception area. The rationale was that a "cuddly" stuffed bear would appeal to the younger audience and create more interest in the skeletal bear in the exhibition. Further, such a bear would be educational and help the audience imagine what the skeletal bear would have looked like. The purchase never happened because the museum leadership argued that it is unethical to partake in the trade of taxidermied animals threatened by extinction. This is mentioned to demonstrate how the polar bear evoked multi-faceted ethical discussions that engaged museum workers in charge of making the exhibition, those in charge of marketing and public communication, and the museum leaders.

Beyond these observations, the polar bear elicits a response by his very otherness, as the remnant of a once-living creature he serves the same purpose as that of Yorick's skull in Hamlet – a *memento mori*. Polar bear Iorek Byrnison in Philip Pullman's beloved Northern Lights trilogy, His Dark Materials, might be inspired by the following line in Shakespeare's Hamlet, in which Hamlet reminisces about Yorick: "Alas, poor Yorick! I knew him, Horatio […] he hath borne me on his back a thousand times" – just like Iorek the *panserbjørn* carries Lyra Silvertongue on his back. These and other associations might play out in the visitor's inner eye and remind them of how all things must pass. Given the stark outlook for polar bears as a species, this is what they might all become, skeletons in a museum. Stories matter, and a story is also shaped by the way we create displays of past objects and afford them space to be experienced as past beings. The construction of stories by means of a museum display must also play a part in the ethical considerations that are so vital when creating exhibitions.

Exhibition as a reflective practice – creating an arena to contemplate the big questions

In conclusion, we return to Williams (2019) and his blog post dedicated to the discussion of whether or not it is ethical to exhibit animals: "Neither animal nor human remains should be displayed by default. Neither animal nor human remains should be removed from display as a blanket policy. The ethics lie not in their presence or absence, but in the character and efficacy of their deployment in relation to envisioned goals of particular exhibits." In our experience, the ethics rest in the reflection by the museum workers when creating exhibition visions and strategies. By bringing ethics into the process, the goals for the exhibitions are challenged and, as a result, the exhibitions become more grounded in both the agency, context and species specificities of those that are on display, whether they be human or animal.

In the case of the Finnøy bear, we have concluded that, by exhibiting him, we are allowing his remains to continue to engage with the public. Repatriation is a moot point, since the bear is exhibited no more than 30 km from where he perished. By his display, the museum can disseminate scientific stories, the find story, and narrative stories as well as charisma stories. These stories affect all of us – and they will shape our future. Similar to Howard Williams' visit to Weston Park Museum in Sheffield, England, UK, where the polar bear is "a named animal (that) becomes an animal-ancestor for the museum – known by generations of visitors and familiar to them" (Williams 2019), the Finnøy bear is somewhat of a mascot for the Museum of Archaeology. Ultimately, the exhibition becomes a site within the museum to reflect on themes such as the majestic stature of male polar bears, their remarkable adaptation to an extreme environment, their resilience to global changes through thousands of years, and how polar bears might become extinct forever in the near future (Molnár et al. 2020). By affording him a prominent place that unfolds his presence and individual personality, we also open a space for the affection of the public and for the desire to return and visit him again and again, across the generations. He can thus become a stepping stone into experiencing other individuals in the museum, and our job as curators and custodians is to make sure that the agency afforded to the Finnøy bear is extended to the remains of other animals.

Acknowledgements

We are grateful to the editors of this volume for their remarks, and to Howard Williams for his thoughtful and inspiring comments.

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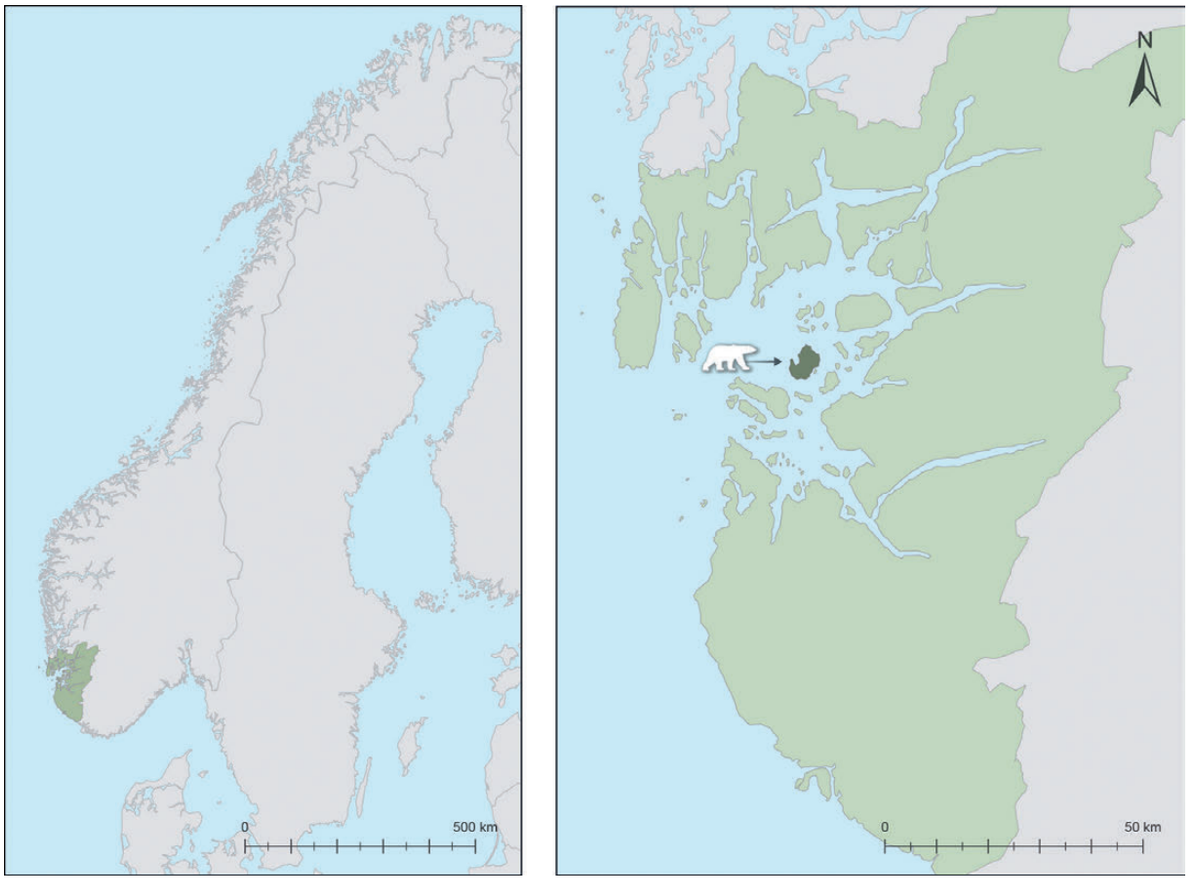


Fig. 1. Finnøy in southwest Norwegian Rogaland, where the polar bear remains came to light (map I. Tinglum Bøckman; based on © Kartverket).



Fig. 2. The Finnøy polar bear under excavation. Spine and rib bone (photo H. Thomsen, Museum of Archaeology, University of Stavanger).



Fig. 3. The Finnøy polar bear under excavation. Femur bone with remains of the stomach, with dissolved bones from seal, visible as a brownish layer above the bone (photo H. Thomsen, Museum of Archaeology, University of Stavanger).



Fig. 4. The Finnøy polar bear in his old place in the showcase to the left in the café area (photo Museum of Archaeology, University of Stavanger).



Fig. 5. The Finnøy polar bear in the new exhibition at the Museum of Archaeology, front view (photo A. G. Øvrelid, Muesum of Archaeology, University of Stavanger).



Fig. 6. The Finnøy polar bear in the exhibition at the Museum of Archaeology, side view (photo A. G. Øvrelid, Museum of Archaeology, University of Stavanger).



Fig. 7. The Finnøy polar bear as a cuddly toy with a T-shirt with his name, Finn (photo Museum of Archaeology, University of Stavanger).

The bear minimum. Reconsidering ursine remains and depictions at Pitted Ware culture (*c.* 3200–2300 BC) sites in Sweden[1]

By Tobias Lindström

Keywords: Sweden, Middle Neolithic, 4th millennium, 3rd millennium, predator, human-animal relations

Abstract: This paper discusses the remains and possible depictions of bears found at Middle Neolithic Pitted Ware culture (PWC) sites in Sweden in relation to ethnographic accounts of northern Eurasian bear ceremonies. The bear has been defined by some as a prominent animal in PWC cosmology, but bear remains occur at only eleven PWC sites, most commonly in the form of teeth or limb bones. A couple of zoomorphic figurines have tentatively been interpreted as depicting bears, but most of these have few distinguishing features and can best be described as generic. Even though the bear remains are comparatively rare inclusions at these sites, some of them seem to have been treated and deposited in "special" ways such as inside a clay pot or adjacent to hearths and cooking pits. Due to the varying treatment of bear remains in the investigated area, it is suggested that any special status of bears in the PWC cosmology must be argued for on a site-to-site basis rather than applied wholesale to the entire PWC complex.

Introduction

The hunting of bears and the ritual disposal of their bones seem to be practices of considerable antiquity. It has been suggested that the ritual treatment of bears was already being carried out in the Upper Palaeolithic, as is exemplified by finds of red ochre-stained bones from cave bears (*Ursus spelaeus*) found in Belgian caves (Germonpré/Hämäläinen 2007). A possible ritual use of bear remains has also been archaeologically identified at Bronze and Iron Age sites in different parts of Eurasia (e.g. Magnell/Iregren 2010; Kosintsev et al. 2018). In many northern Eurasian hunter-gatherer communities the bear is considered a particularly evocative and potent figure and is often associated with deities and spirits (e.g. Zolotarev 1937; Kimura 1999; Pedersen 2001; Rydving 2010; Westman Kuhmunen 2015). The bears' size and appearance, their ability to stand and walk on their hind legs (much like humans), and the danger they pose to those who cross their path are some of the most commonly cited reasons why bears are almost universally feared and admired. Sámi and Finnish noa names for the bear include "golden king of the forest", "keeper of the forest" or simply "forest" (see Piludu, this volume; Pentikäinen 2005, 9; Herva/Lahelma 2019, 80–81).

1 This paper is dedicated to the memory of my grandmother, Vivi-Anne Dahlberg, who passed away on October 16, 2019.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 335–350 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134340

Inquiries into bear remains found in prehistoric archaeological contexts frequently draw upon the spectacular bear ceremonies attested in ethnographic studies of northern Eurasian hunter-gatherer communities (e.g. Zvelebil 2003; Germonpré/Hämäläinen 2007; Losey et al. 2013; Gasilin/Gorbunov 2019). The ethnographic record has often proved to be a useful source for hypotheses and interpretations that are not readily apparent to archaeologists, although caution may be advised against uncritically applying recent practices to the archaeological record. Some archaeologists view the bear ceremonies documented in northern Eurasia as relics from the Stone Age, essentially providing direct insight into bear-related ritual activities that took place in the distant past (e.g. Gasilin/Gorbunov 2019, 73). The idea is not a new one; the bear ceremonies conducted by different groups in northern Eurasia were regarded by past anthropologists as representatives of a single primordial bear ritual (e.g. Hallowell 1926). Modern historians of religion are, however, sceptical about such claims (Rydving 2010). In his comparison between the bear ceremonies of the Khanty in Siberia and the Sámi in northern Fennoscandia, Håkan Rydving points out that important differences are found in the focus and priorities of the peoples conducting the ceremonies; the Khanty consider the festivities and the entertainment as the most important aspects of the ceremony, while the Sámi put more emphasis on the feast and the subsequent burial of the bear's remains (Rydving 2010, 42; see also Rydving, this volume). Also, most of the similarities that can be observed in the bear ceremonies of the Khanty and the Sámi are found in other types of rituals as well and are thus not specific to the treatment of bears (Rydving 2010, 43).

In this paper, I will concern myself with bear-related archaeological finds attributed to the Swedish Pitted Ware culture (PWC) of the Middle Neolithic period (*c.* 3200–2300 BC). "PWC" is the conventional name for a hunter-gatherer complex found primarily in coastal areas of southern Scandinavia, with a concentration of "typical" PWC sites on the eastern Swedish mainland and the Swedish islands of Gotland and Öland as well as the Finnish Åland islands (Fig. 1). These typical sites often yield large amounts of pottery sherds emanating from the characteristic pointed-based and pit-decorated clay pots that have given the culture its name. Seasonal sites are also found in north-eastern Denmark, while the presence of the PWC in western Sweden and southern Norway has been a matter of debate due to the comparatively small amounts of pottery in these areas (see e.g. Larsson 2009, 56).

Large amounts of bones from seal and fish at the PWC sites strongly suggest a marine subsistence, even if large terrestrial animals such as wild boar and elk as well as smaller animals and birds are also present in the faunal assemblages. Stable isotope analyses on human remains confirm that the diet was based on marine protein (Eriksson et al. 2008; Fornander et al. 2008). Small zoomorphic and anthropomorphic clay figurines are also a somewhat regular occurrence on PWC sites in eastern Sweden, albeit often in small numbers (but see Björck et al. 2020). It has been suggested that some of these depict bears (Runeson/Kihlstedt 2018, 62; Björck et al. 2020, 138–141), and this will be further discussed later on.

The ample finds of animal bones in cultural layers, graves and deposits, coupled with the making of zoomorphic clay figurines, have led scholars to propose that the PWC was characterised by a cosmology and/or a cultural identity that was deeply entwined with wild animals and the practice of hunting (Wyszomirska 1984, 114–116; Björck 2003; 2011; Gill 2003, 150–152; Stenbäck 2003, 204; Fornander et al. 2008). On the basis of supposed bear depictions among the clay figurines the bear has been mentioned as an important figure in an animistic cosmology, rooted in the Mesolithic, that the PWC supposedly shared with other hunter-gatherers to the north and northeast in Finland, the Baltic states, and Russia during the Neolithic (Wyszomirska 1984, 209; Björck 2003; 2011). Some archaeologists have also drawn parallels between the PWC and recent hunter-gatherers in northern Eurasia with regards to subsistence strategies, social structure, ideology, and ritual practice (e.g. Zvelebil 1997; Mannermaa 2008).

A potentially illuminating approach might be to compare the bear-related finds at PWC sites to the treatment of bears among ethnographically studied northern Eurasian hunting-gathering societies conventionally described as "animistic". The term "animism" carries considerable baggage that stems from its Eurocentric origin as a way of explaining the alleged ontological shortcomings of non-European "primitives" (Tylor 1871; Harvey 2006, 5–9). A more current anthropological scholarship has sought to expel some of the primitivist connotations of the term and to reclaim it as a valuable analytical tool for discussing communities in which humans are but one kind of person among a myriad of persons (e.g. Bird-David 1992; 1999; Harvey 2006, xi).

In the following section, a short overview of the ethnographic accounts of bear ceremonies conducted by recent hunter-gatherers in northern Eurasia will be presented, and the methodological utility of these accounts will be discussed with reference to the material residues produced during the aforementioned ceremonies. Most of the examples presented in the following paper revolve around subspecies of the brown bear (*Ursus arctos*), so the vernacular term "bear" refers specifically to brown bears, while other species of bear are mentioned by their common and scientific names when they occur.

Bear ceremonies and their archaeological implications

Various bear ceremonies have been practiced by many groups of hunter-gatherers in northern Eurasia throughout the years. These groups include, but are not limited to, the Sámi in northern Fennoscandia, the Khanty in Siberia, and the Yukaghir, Ulch, Orochon, and Ainu in eastern Russia and northern Japan. In his seminal work on bear ceremonialism in the northern hemisphere, the American anthropologist Alfred Irving Hallowell highlighted what he perceived to be striking similarities in the bear-human relationships of several societies in northern Eurasia (Hallowell 1926). An overall similarity between these societies is that bears are considered to be intimately connected to the spirit world as well as able to engage in reciprocal social relations with humans (Ingold 2000, 92–94; Nadasdy 2007; Willerslev/Pedersen 2010).

The reciprocal relations between bears and humans require humans to show the bear respect, which is why the process of hunting, killing and butchering of bears is circumscribed by a host of rules and regulations. The bear is often talked about as a guest that provides the humans with gifts (its meat, pelt, and gall) and must therefore be given prayers, gifts, and a splendid feast in return (Irimoto 1996, 297). This ethos of reciprocity, gift giving and hospitality is further highlighted in the terminology employed in connection with bears in many places. Words and phrases such as "getting" the bear or "sending it away" are used rather than "hunting" or "killing", implying an ontology in which the bear gives itself willingly to the hunters and its spirit must be guided back to the spirit realm (Zolotarev 1937; Irimoto 1996; Westman Kuhmunen 2015, 81). Among the Tsaatang in northern Mongolia this ontology manifests itself in a fascinating way. There, custom dictates that when a hunter tracks a bear and the bear climbs up into a Siberian larch, the hunter must end his pursuit and walk away. Similarly, if an unarmed member of the Tsaatang should climb up into a Siberian larch when pursued by a bear, the bear is expected to honour this reciprocal relation by walking away (Pedersen 2001, 415).

Two main types of bear ceremonies among the hunter-gatherers in northern Eurasia can be identified: they involve the hunting and killing of an adult bear, and the capturing and rearing of a bear cub in the settlement (Zolotarev 1937; Irimoto 1996; Kwon 1999; Yamada 2018). The most well-known and well-documented of these bear ceremonies is perhaps the Ainu *Iyomante,* the sending-off of a bear reared in the settlement, which concludes with the bear being paraded around and shot with blunt ceremonial arrows, before being shot with a sharp, fatal arrow in the heart and subsequently

strangled between two wooden poles (Kimura 1999, 95). The bear is then given gifts and prayers, the skin and head are removed, and the meat boiled and eaten at a communal feast. Several days of feasting and honouring the bear ensue, and the ceremony is not over until all the meat has been eaten (Kitagawa 1961, 149). A hole is also made in the bear's cranium in order to let the spirit out: For female bears, the hole is made on the right side, and for males on the left side (Masuda et al. 2006). The skull is then wedged between the prongs of a forked wooden pole at a designated altar in or near the settlement and decorated with wooden shavings (Kitagawa 1961, 148; Fig. 2). Archaeological finds do, however, indicate that bear skulls were sometimes deposited in other places as well. DNA-analyses of bear skulls found in a rock shelter in central Hokkaido show that the skulls emanate from different geographical areas, and that they might be the remnants of bear ceremonies conducted by various groups (Masuda et al. 2006).

Sámi bear ceremonies are mostly known from the clergyman Pehr Fjellström's account of the southern Sámi bear hunt (Fjellström 1981, originally published in 1755). The account tells us that when a bear is killed in its den, it is left in the woods while the hunters return home singing a song to let the settlement know they have killed a bear. Upon returning, they are met by women who look at them through brass rings and spit chewed alder bark at them and their hunting dogs (Fjellström 1981, 20; Westman Kuhmunen 2015, 82). The hunters are then subjected to ritual seclusion in a designated tent overnight, before they can return to collect the bear carcass the following day. The bear is skinned and the meat carved off in a certain order, and thereafter it is cooked and served by the men in separate vessels for men and women, who also eat in different parts of the camp (Fjellström 1981, 26). After all the meat has been eaten, the bones are either directly buried in anatomical order (Fjellström 1981, 30–33), or placed on a platform to prevent scavenging before subsequent burial (Westman Kuhmunen 2015, 84). Archaeologically and osteologically studied Sámi bear graves in Sweden provide a perspective that is not visible in the ethnohistorical accounts. While the ethnohistorical material stresses that all bones must be intact (see Fjellström 1981, 31), the known bear graves often feature intact skulls and shoulder blades, while the other bones are fragmented or cleaved in a manner consistent with the extraction of marrow (see Iregren; Sommerseth, this volume; Zachrisson/Iregren 1974, 83–84; Jennbert 2003).

For the Khanty in Siberia, the discovery of a bear or an active bear den is taken to mean that the bear wants to visit the settlement. The bear is then killed and taken to the settlement, where it is presented with gifts and then skinned, leaving the paws and skull in the pelt (Jordan 2003, 115–120). There are also examples of the pelt having been already removed in the forest, with the rest of the carcass left behind (Rydving 2010, 38–39). The bear's cranium is cracked open and the brain eaten by the hunters while the other bones are carefully disarticulated, with some meat left around the joints, and then deposited in bodies of water, quite unlike the bones of other animals (Jordan 2003, 123). The bear skulls are placed on the roofs of storehouses, with their jaws wired shut with branches in order to prevent revenge if the bear remembers its killer in its next life (Jordan 2003, 123). A bear's skull is, however, only kept by the Khanty while the hunter who killed it is alive, after which the skull is deposited in water or in the forest. The practice of wiring the bear's jaws shut with branches to prevent vengeful attacks is also found among the Yukaghir, who then place the skull with the other defleshed bones on a wooden platform or in a tree (Hallowell 1926, 143–144; Willerslev 2013, 51).

It is important to keep in mind that substantial parts of the ethnographically studied bear ceremonies would leave little to no traces in the archaeological record. These parts include, for example, non-material practices such as songs, stories and games as well as perishable paraphernalia used during the ceremonies. Still, while many aspects of the bear ceremonies do not leave tangible material traces that would survive for millennia, the skeletal remains are often treated in a special manner. Skulls are evidently the most important bone element in the ethnographic record (see also Germonpré/Hämäläinen 2007). Crania or whole skulls feature prominently, from the Sámi prescribing that the

cranium must be complete at burial, to the caching and display of bear crania seen among the Ainu. The jaws are in some cases wired shut, but it would take exceptional conditions for young, flexible branches to be preserved for thousands of years. In some cases, holes are made in the bear's cranium either unilaterally left or right or in the back. Other skeletal parts might also be important, since for example the Khanty leave both the skull and the paws in the pelt and consider the soul to reside in these (Jordan 2003, 115–120). Similarly, the Navajo tribe in the southwestern USA have used the paws of bears (both grizzly bear, *Ursus arctos horribilis*, and American black bear, *Ursus americanus*) for making medicine bags (Pavlik 1997). Regarding the special treatment of certain bone elements, it is also worthwhile to mention the Neolithic cemetery of Shamanka II in southern Siberia. There, bacula (penis bones) from bears have been found in numerous graves, and in two of the graves bear crania were deposited face down in the filling above the human skeletons (Losey et al. 2013). Bacula from bears are attested from the Palaeolithic and have been interpreted as symbols of the strength and power of the bear, and the use of them as tools has been suggested to be a means of transmitting the "bear power" to humans (Giemsch 2017).

Bear-related finds on PWC sites in Sweden

Looking at the long-term trends, there is a noticeable decline in the amount of recovered bear remains following the shift from the Mesolithic to the Early Neolithic (after *c.* 4000 BC), with very few finds until the latter part of the Middle Neolithic (*c.* 2900–2300 BC), where an increase attributable to the hunting subsistence of the PWC can be noted (see Magnell, this volume). Bear remains are, however, comparatively few even in the PWC area, occurring at eleven sites in total, while bear figurines or depictions are explicitly suggested at three sites (Fig. 3; Table 1). Finds from the Middle Neolithic horizons at Sjöholmen and Nymölla are included in the table, but it should be noted that these are multi-period sites with Mesolithic and Early Neolithic settlement layers as well, and a certain degree of intermingling can therefore not be completely ruled out (see for example Forssander 1930; Wyszomirska 1979).

As is evident in Table 1, most of the bear remains recovered from PWC sites in Sweden have been found in cultural layers, where they occur among the remains of more common animals such as seal, fish, pig, elk, beaver, and waterfowl. There are, however, some exceptions to this, as there are three Swedish PWC sites with documented instances of bear remains having been found in contexts that suggest deliberate and selective deposition. In contrast to the ethnographic examples, where skulls are generally singled out, the possible deposits of bear remains at the Swedish PWC sites include teeth and bones from the extremities.

Perhaps the most intriguing example of the selective treatment of bear remains comes from Äs in Västmanland. Bones from pig, elk, and seal dominated the overall assemblage at the site, but two maxillary teeth from a bear were reportedly found placed inside a clay pot (Lepiksaar 1974, 150–152). At the newly excavated site of Tråsättra in Uppland, a distal phalanx and a carpal bone, possibly emanating from the same bear, were found next to a cooking pit in what has been interpreted as a ritual deposit (Björck et al. 2020, 174; Magnell 2020). The only other possible animal bone deposit at the site consisted of an otter mandible found in the remnants of a hut construction (Björck et al. 2020, 174).

It has been suggested that a bear ulna, which was recovered from the enigmatic Middle Neolithic pile dwelling site in Alvastra, Östergötland, may be the remnant of some sort of ritual activity following a successful hunt (During 1986, 138). The ulna was found together with two flint arrowheads close to one of the numerous hearths at the site. The absence of cut marks on the ulna possibly indicates that selective handling might have taken place, since most of the long bones from other

species found in the pile dwelling were broken or otherwise damaged. Based on the size of the ulna, the Alvastra individual is estimated to have been of greater stature than most brown bears. The large number of hearths at the Alvastra pile dwelling, the signs of use by both the Funnel Beaker culture and the PWC around 3000 BC, as well as finds of dispersed human bones and a cut-marked human cranium, have led to the site being interpreted as an aggregation site where people met to socialise, trade, and conduct ceremonies (Frödin/Fürst 1919; Browall 1986, 65; Malmer 2002, 103–107).

With the exception of the Sjöholmen site, skeletal elements from the torso are lacking in the PWC material, which might indicate that the finds derive mainly from bear pelts rather than from complete carcasses (see Lepiksaar 1974, 150–152). As has previously been mentioned, this is also attested among the Siberian Khanty, who remove the pelt from the killed bear with the paws and the head still attached (Jordan 2003, 115–120). In Iron Age grave settings, finds of bear phalanges are sometimes interpreted as the remnants of a pelt onto which the deceased was laid when buried (Lindholm/Ljungkvist 2016; Kirkinen 2017), although it has been pointed out that finds of bear claws need not always imply the presence of a pelt (Grimm 2013). As of yet, no bear remains have been recovered from clear PWC burial contexts, but a distal phalanx was, however, recovered during excavations in 2007 at the large PWC site of Ajvide on Gotland, famous for its many burials (currently 85, see e.g. Wallin 2015). The phalanx was unearthed from a deep, dark cultural layer containing bones from common prey animals such as seal and pig, as well as human cranial fragments (Norderäng 2008, 5). The bear phalanx is likely unrelated to these fragments, as human remains are often found scattered in the cultural layers at Ajvide as well as at other PWC sites (Wallin 2015; Götherström et al. 2002). Additional bear remains, in the form of distal phalanges and teeth, have supposedly also been found at Ajvide, but the precise nature of these finds is unclear as they are mostly mentioned to showcase the far-reaching contacts of the Middle Neolithic trading networks (e.g. Österholm 1989, 187; 1991, 17; Burenhult 1997, 18; Molnar Appelblom 1997, 86; Wallin 2017, 123). At the present time, the finds from Ajvide are not fully systematised and are thus largely inaccessible to researchers.

The presence of at least one bear phalanx on Gotland is noticeable given the fact that the island has never had a resident bear population. Remains of other non-local species are present at PWC sites on Gotland, found in the form of worked beaver teeth, antler pieces from elk or deer as well as tooth beads made of elk teeth (Janzon 1974, 78; Lindqvist/Possnert 1997, 69; Burenhult 2002). Radiocarbon dating and DNA-evidence also suggest that the hedgehog was introduced to Gotland by the PWC people (Lindqvist/Possnert 1997; Fraser et al. 2012). These people were not strangers to the concept of acquiring and transporting animals, or parts thereof, from the mainland to the settlements on Gotland. This evidently included bear remains to a limited extent.

Even though the Danish PWC sites fall outside the scope of this paper, a cursory comparison between the Swedish sites with bear remains and an extraordinary deposit at the Danish PWC site of Kainsbakke, Djursland, raises questions (see Klassen/Gregersen, this volume). There, the remains of ten bears in the form of largely intact crania and phalanges have been found alongside pottery, flint tools and debitage, and the remains of other animals, such as fish bones, mollusc shells, horn cores from aurochs, mandibles from wild boar, elk and red deer, as well as some disarticulated human bones, in a large pit (Wincentz 2020, 48–52). Several of the bears were of advanced age and some of them have, through Strontium isotope analysis, been determined to be of non-local origin (Makarewicz/Pleuger 2020, 301–303; Klassen et al. 2020a). Crania and phalanges are not typically indicative of subsistence practices, but might instead indicate that pelts from bears killed in other parts of Scandinavia were brought to the site. The finds from Kainsbakke are more comparable with the northern Eurasian bear ceremonies, particularly since the skulls feature prominently, and have been interpreted as the remnants of "shamanistic rituals" adopted from the Swedish PWC (Klassen et al. 2020a; b). Comparisons with the east Swedish evidence for possible bear rituals fall short, since the Kainsbakke pit is more elaborate than anything found at the Swedish PWC sites.

Moving on to bear-related artefacts, a hitherto unique find is a bear ulna from Åloppe that has been fashioned into some sort of tool (Fig. 4). The artefact has been interpreted by some as an elk sculpture (Indreko 1955; Wyszomirska 1984, 51), while others have questioned whether the schematic elk-like appearance really can be considered deliberate (Carpelan 1977, 36–37). The only other example of a PWC artefact made of bear remains comes from Korsnäs and consists of a bead made of a perforated bear tooth (Olsson et al. 1994; Sjöling 2000).

As previously mentioned, there are a number of zoomorphic artefacts that have been singled out as possible bear depictions. Despite the existence of many zoomorphic clay figurines, exceedingly few can confidently be assigned to specific natural species, due to the fragmentation and abstraction of most of these artefacts. It has been suggested that one of two quadruped clay figurines found at Åby in Östergötland depicts a bear, although this is again presented with some caution due to the vague characteristics and fragmented state of the figurine (Runeson/Kihlstedt 2018, 62; Fig. 5a). Six clay figurines from the aforementioned site of Tråsättra have been suggested to depict bears (Björck et al. 2020, 138–141; Fig. 5c–d). These clay figurines are, however, very dissimilar and at least one of them (Fig. 5d) might be considered anthropomorphic, since its facial markings are similar to those found on anthropomorphic figurines (see Cederhvarf 1912; Nuñez 1986). The differences that are visible among these suggested bear depictions might indicate that either no standardised conventions for how to make bear figurines did exist, i.e. bear depictions could vary considerably from figurine maker to figurine maker, or that these figurines are not all meant to resemble bears.

Another artefact that has been suggested as a bear depiction is a peculiar greenstone club found at Stora Vika, Södermanland (Fornminnesavdelningen 1966; Fig. 5b). Its exact find context is unknown since it was found by chance during landscaping, but finds of Pitted Ware pottery sherds at the same locality makes attribution to the PWC probable, as do the proximity to several confirmed PWC sites in the surrounding area (Baudou 1966; Isaksson et al. 2003). The stone club from Stora Vika is highly schematic and thus difficult to positively identify as a clear bear depiction. Conversely, several very naturalistic bear heads are seen on stone clubs that have been recovered as stray finds in northern Sweden and Karelia, mainly outside of the PWC area and of possible Late Neolithic date (see Almgren 1906; Ailio 1912; Carpelan 1977).

Assessing scales: The bear minimum of the PWC

In comparison with the ethnographic accounts presented, the archaeological evidence from the Swedish PWC sites is variable in nature and seemingly less focused on particular skeletal elements. The prominent position of the cranium in the ethnographic sources is not reflected in the Swedish PWC material. The finds of bear remains at the Swedish PWC sites are sparse, and the treatment of them is obviously understated in comparison with the ethnographic accounts of bear ceremonialism among northern Eurasian hunter-gatherers. The selective handling and deposition of the bear's skull visible in the ethnography is markedly contrasted with the absence of skull bones from bears at the Swedish PWC sites, where teeth and paws are the most common elements found. This, in connection with the relative paucity of bear remains on these sites, does not seem to readily invite comparison with the exuberant bear ceremonies, which involve a large part of the community and specialised handling of entire bear carcasses, among recent hunter-gatherers in northern Eurasia. That is not to say that the comparisons are unhelpful, merely that they suggest that the handling of bear remains in the PWC was less formalised.

Knut Helskog suggests that the absence of bear bones, other than distal phalanges and teeth, in a large part of Fennoscandia might in itself be an indication of the special treatment afforded to bear remains from the Mesolithic and onwards (Helskog 2012). Of course, there need not be a direct

correlation between the importance of bears in a society and the identifiable presence of bears in the material/archaeological record of that society. This is, for example, seen among Andean groups, where the spectacled bear (*Tremarctos ornatus*) cannot be readily identified in the iconography but is still an important cosmological figure (Paisley/Saunders 2010). A similar case has been proposed for the curious absence of bears in Old Norse iconography, when they are obviously significant in other cultural media (Hedeager 2004, 249; but see Oehrl 2013; and Oehrl, this volume, for a different view on the matter). The case does, however, get more complicated when all we have is the material record of a society, and while I agree with Helskog in principle, i.e. that absence might point to selective deposition, this is of course hard to prove. The discussion then boils down to how we can make sense of an unfamiliar archaeological phenomenon when our oft-used ethnographic models are seemingly inapplicable.

The location of many PWC sites on small islets in an archipelagic landscape is likely a sound explanation for there not being many bear bones present, since bears are known to roam larger stretches of, preferably forested, land (Magnell 2020). The bear ceremonies of various peoples in northern Eurasia were conducted in forested areas with breeding bear populations, where people conceivably witnessed and interacted with bears on a fairly regular basis. This is perhaps not readily comparable with the geographical distribution of bear remains at the Swedish PWC sites. Here I side with Nurit Bird-David regarding the "scale-blindness" of some archaeological research on animism, where focus has been placed upon a general, supra-regional notion of animistic collectives and of "all animals as persons" that might not have been relevant at a local level (Bird-David 2018). There has been a concept of "Animism with a capital A", when there are in fact plural animisms that should be considered (Willerslev 2013, 49). Animism is not an abstract, overarching worldview, but rather a relational and situational engagement, according to Bird-David (2018, 307), who takes the example of how an elephant that passes through a hamlet without trampling the huts is considered a person by her Indian Nayaka informants due to its respectful behaviour towards people. Conversely, an elephant that does not display such considerate behaviour is not regarded as a person.

I do agree with the fundamental importance of animals for the PWC and the similarities between the PWC and the Mesolithic and Neolithic hunter-gatherers of northeastern Europe, but to posit the bear as a recurring and important icon in an animistic cosmology attributable to the PWC is to sidestep the problems associated with the identification of the species depicted among the zoomorphic artefacts. If the zoomorphic figurines presented here (cf. Fig. 5) are all meant to resemble bears, it would suggest that no overarching conventions dictating the "proper" way of depicting bears existed. If the bear was indeed an important cosmological figure for the PWC, one would perhaps expect a higher degree of conformity in the depictions. It is also problematic, given the small amount of bear remains at the PWC sites. If we wish to understand prehistoric human-animal relations, our inquiries might benefit from the realisation that, at the centre, were the interactions between humans, animals, and plants, whose lives intersected on a regular basis (see for example Ingold 2013 on anthropology beyond humanity; see also Pilaar Birch 2018).

If we adjust the scale, from the grand animistic complex to what has happened at each site, we can focus on the indications of intentional "special" deposition, such as the bear teeth in the clay pot at Äs and the remains found near to hearths or cooking pits at other sites. The bear remains do not seem to have been treated in a manner that diverged all that much from how other animal remains were treated at the PWC sites, apart from the fact that bear remains were transported to Gotland not as artefacts, but in an apparently unmodified state. The animal bones included in graves and depositions at PWC sites suggest that the remains of certain animals such as, for example, seal, porpoise, dog, pig, and hedgehog were regularly employed in depositional acts, and it is reasonable to assume that the species of the animal and the anatomical element used were not inconsequential (see for example Lindström 2020). Viewed through this lens, the use of animal remains might have been a way to

employ or direct the animal agencies within (e.g. Conneller 2004; Overton 2016). Bear remains could have constituted a particularly potent animal substance, as several finds seem to indicate special deposits. Perhaps the bear remains still contained a certain "bear-ness" that could be harnessed. Instead of grand rituals directed towards spirits or a spirit collective, as in the cited ethnographies, we might envision these deposits as small-scale acts of depositional "magic" carried out by the PWC hunter-gatherers in order to affect the world, bring about change, and ameliorate certain aspects of their day-to-day lives (see Brück 1999; Hofmann 2020).

Concluding remarks

No uniform way of relating to bears can be proposed from the osteological material found at the Swedish PWC sites, and the zoomorphic artefacts are too schematic to positively identify as bear depictions. The supposed status of the bear as a particularly prominent figure in an overarching PWC cosmology is thus difficult to establish. This should, however, not be misconstrued as an assertion that bears were unimportant, since bear remains were obviously important enough to transport from mainland areas with breeding populations of bears out onto the archipelago and even further away, across the sea to Gotland. The ethnographic accounts of the northern Eurasian bear ceremonies have, despite not being entirely applicable, aided the discussion of the bear-related finds on PWC sites. It is perhaps not surprising that bear remains might have been treated differently in areas with less dense (or non-existent) bear populations. Furthermore, even though the bear remains are scarce in comparison to the remains of many other animals such as seal, pig, elk, or fish, several finds point to intentional deposition near hearths, cooking pits, and, in one instance, inside a clay pot.

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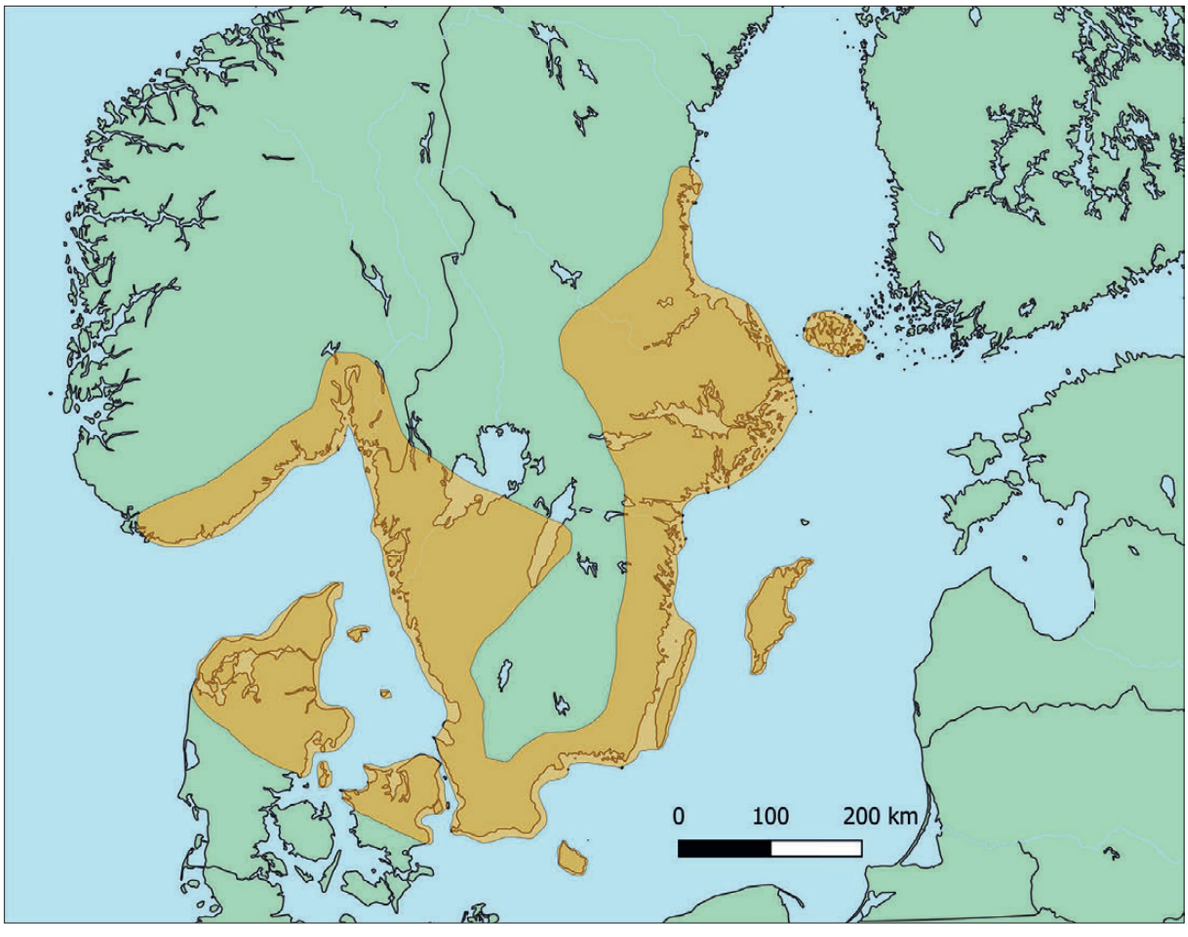


Fig. 1. Map of the approximate range of sites attributed to the Pitted Ware culture (map T. Lindström, with QGIS 3.10 using the Natural Earth Dataset).



Fig. 2. Bear skulls from Ainu bear ceremonies put up for display. Note the unilateral holes visible on several cranial vaults (photo J. Revilliod, after Ozaki *1913, 405).*

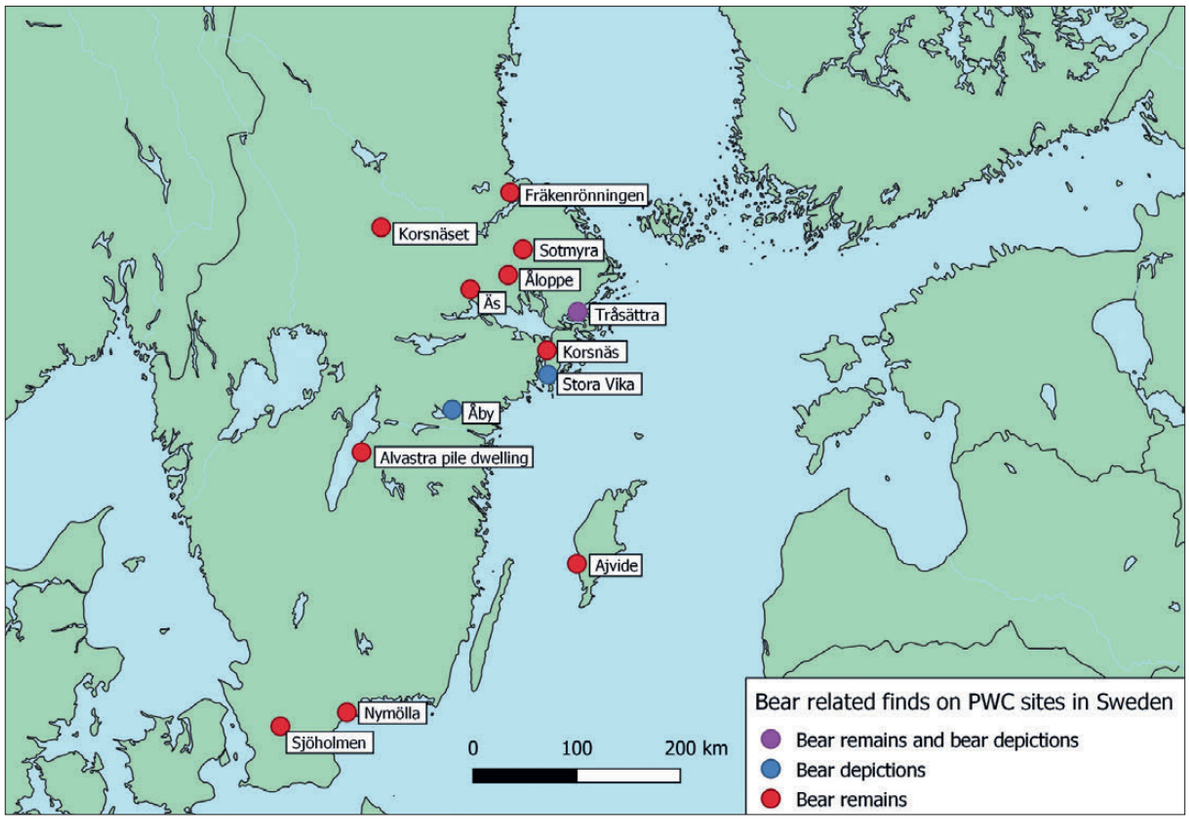


Fig. 3. Map of the Swedish Pitted Ware culture sites with bear remains and alleged bear depictions, as well as sites with both (map T. Lindström, with QGIS 3.10 using the Natural Earth Dataset).



Fig. 4. Tool made of a bear ulna from the Pitted Ware culture, found at Åloppe. Some have interpreted the artefact as an elk sculpture (photo T. Lindström, Swedish History Museum, CC BY 4.0).

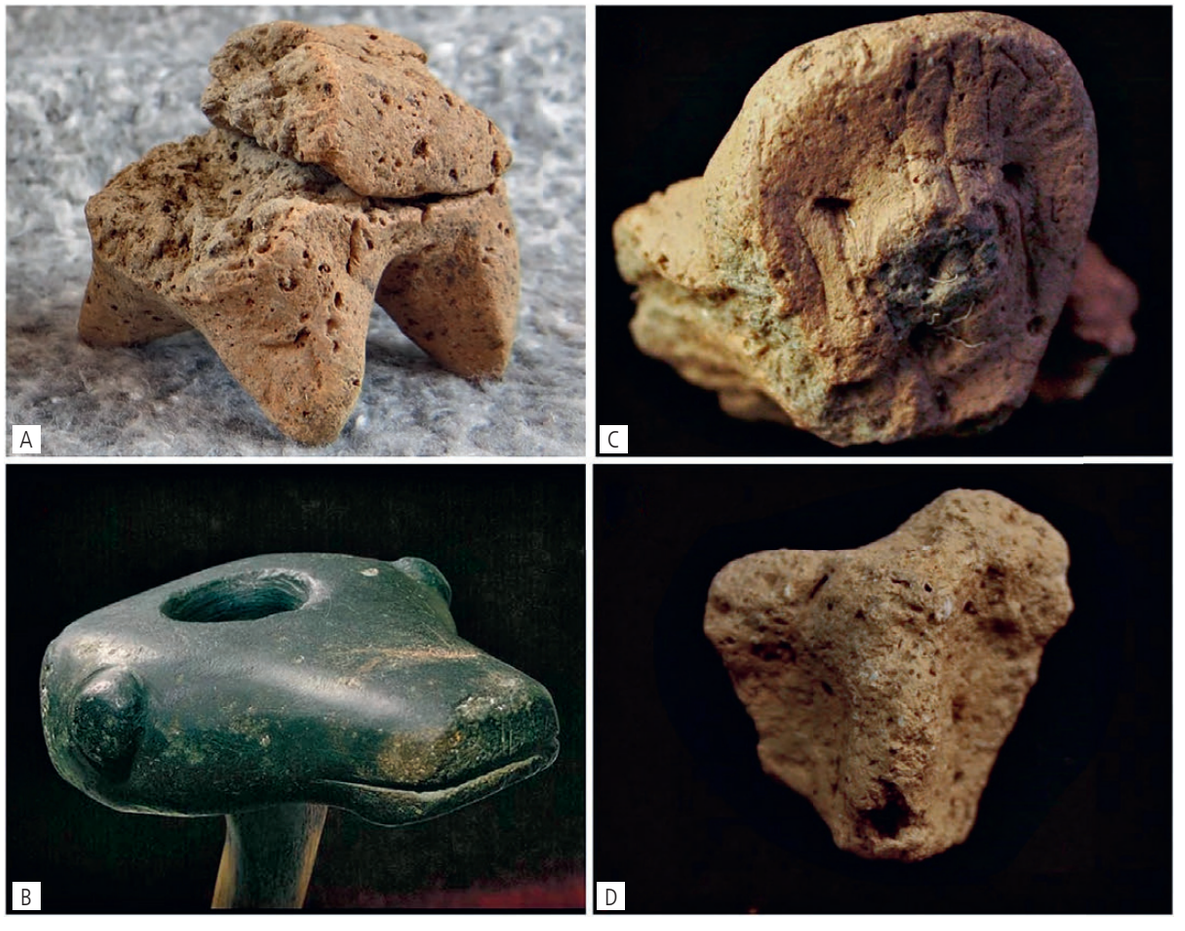


Fig. 5. A selection of suggested bear depictions from the Pitted Ware culture area; a: Clay figurine from Åby (photo courtesy of H. Runeson, Stiftelsen Kulturmiljövård); b: Stone club from Stora Vika (photo Swedish History Museum, CC BY-SA 2.5); c–d: Clay figurines from Tråsättra (after Björck et al. 2020, figs. 101–102; photos N. Björck, Arkeologerna/Swedish History museum, CC BY 4.0).

Table 1. Finds of bear remains at Pitted Ware culture sites in Sweden.

Site	No. of fragments	Bone element	Find context	Notes	References
Ajvide	1 (minimum)	Phalanx	Cultural layer	At least one bone, unclear documentation	Burenhult 1997, 18; Norderäng 2008, 5
Alvastra pile dwelling	4	Tooth, ulna	Deposit	Ulna found next to hearth	During 1986, 74
Fräkenrönningen	2	Undetermined	Cultural layer	Highly fragmented	Björck 1998, 43; Olson et al. 2011
Korsnäs	3	Metatarsal, metacarpal, tooth	Cultural layer	Tooth pendant	Aaris-Sørensen 1978; Sjöling 2000
Korsnäset	8	Cranium and „meat-poor parts“	Cultural layer		Ericson 1980, tab. 5–6
Nymölla	22	Cranium, mandible, tooth, scapula, carpal, metacarpal, femur, vertebra, metatarsal, metapodium, phalanges	Cultural layer	Multi-period site	Berlin 1941; Rosengren 2018, 47
Sjöholmen	1	Metacarpal	Cultural layer	Multi-period site	Forssander 1930; Thomas 1954; Brännborn et al. 2007, 84
Sotmyra	2	Phalanx	Cultural layer		Segerberg 1999, 179
Tråsättra	2	Phalanx, carpal	Deposit	Metatarsal found next to cooking-pit	Magnell 2020, tab. 3
Åloppe	5	Tooth, phalanx, sesamoid, ulna	Cultural layer	Tool made of ulna	Hedell 1905; Indreko 1955; Gummesson 2008, 64
Äs	12	Tooth, phalanx, maxilla	Cultural layer/ deposit	Teeth inside clay pot	Lepiksaar 1974, 150–152

The Kainsbakke bears and changing patterns in the human-bear relationship through the Danish Mesolithic and Neolithic

By Lutz Klassen and Kristian Murphy Gregersen

Keywords: Bears, rituals, Mesolithic, Neolithic, Denmark

Abstract: With a point of departure in the major discovery of ritually deposited bear bones at the Pitted Ware culture site of Kainsbakke on Djursland, Denmark, this paper sets out to investigate the human-bear relationship in Denmark during the Mesolithic and Neolithic (c. 9500–2400 cal BC). Studies of the abundance of bear bones in the archaeological record demonstrate a decreasing tendency throughout the entire Mesolithic and earlier parts of the Neolithic, followed by a rise in the early 3rd millennium BC (i.e. the Pitted Ware culture). Additional investigations of the treatment of the bones, the selection of specific bone elements and the contexts in which they were found indicate changing patterns in the human-bear relationship. These are interpreted as being due to a combination of environmental change and shifting contacts and interactions with societies in especially the eastern Baltic region.

The Kainsbakke bears

In the early 1980s, a number of brown bear (*Ursus arctos*) bones were excavated at the Neolithic site of Kainsbakke (Richter 1986; Makarewicz/Pleuger 2020, 303–305). Kainsbakke is situated on the Djursland peninsula in eastern Jutland; it is the largest settlement of the Pitted Ware culture (PWC) in Denmark (Wincentz Rasmussen 1984; 1991; Wincentz 2020) and is dated to the early 3rd millennium BC (Philippsen et al. 2020). J. Richter (1986) viewed the Kainsbakke bear bones as the remains of ordinary hunting activities, but this interpretation is, for several reasons, hardly tenable: The number of bones (34, representing at least ten different individuals – by far the largest total from any Neolithic site in southern Scandinavia), the diversity of skeletal elements, and the presence of entire crania are all exceptional. Furthermore, all the remains were found within a single pit – A47. Based on its construction and content of other finds, which included ordered depositions of large numbers of mandibles from several species, this pit can be identified as a ritual feature (Wincentz 2020, 44–56). The bear bones did not appear randomly distributed throughout the pit but sorted to some degree by skeletal element in several concentrations (Fig. 1). This suggests a conscious act of deposition rather than random disposal of waste. It is also remarkable that one of the two intact crania had been placed on top of an aurochs horn (Fig. 2). Furthermore, the taphonomic analysis undertaken by C. Makarewicz and S. Pleuger shows that the fracture patterns of the Kainsbakke bear bones deviate from those observed on the huge numbers of other mammal bones recovered from Kainsbakke – that bears were treated and handled differently from other wild and domestic species

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 351–386 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134341

at the site (Makarewicz/Pleuger 2020, 311). The various lines of evidence outlined above clearly imply that the deposition of bear bones at Kainsbakke was ritual in nature.

Moreover, the ethnographical, historical and archaeological/ethnoarchaeological evidence for bear rituals in hunter-gatherer societies in the northern hemisphere (e.g. Hallowell 1926; Zachrisson/Iregren 1974; Paproth 1976; Black 1998; Wamers 2009; 2015; Helskog 2012) reinforces the interpretation of the Kainsbakke depositions as the result of ritual activities involving bears in the Danish Neolithic, as such practices can be demonstrated to have been widespread and abundant, both geographically and chronologically. Several observations at Kainsbakke provide further specific evidence. Of the several thousand bones recovered from pit A47, not only those of bears are remarkable; there are also a few bones of elk (*Alces alces*) and two wing bones of a Dalmatian pelican (*Pelecanus crispus*, cf. Makarewicz/Pleuger 2020, 307–308; Klassen et al. 2020a, 455–464). The elk bones are some of the latest examples of this species hitherto found in Denmark (as is also true of the bear bones), and the Dalmatian pelican is an exceptionally rare find in the Danish Neolithic with only two other known records (cf. Nikulina/Schmölcke 2015). Strontium isotope analysis demonstrates that the elk are non-local, and the same is true for at least some of the bears. These foreign elements had probably been brought to Kainsbakke in the form of single, disarticulated bones intended for ritual activities (Klassen et al. 2020b, 430–436; Price et al. 2021). The most likely region of origin for both the elk and the bear remains is the coastal area of western Sweden, about 100 km away on the opposite side of the Kattegat (Klassen et al. 2020b, 432–436; Price et al. 2021). The PWC people on Djursland were in close contact with PWC groups there. This combination of exceptional skeletal elements from bears, elk, and a very rare waterbird reflects the performance of shamanistic rituals, as clearly indicated by the ethnographical and archaeological evidence from northeastern Europe and western Siberia, which reveals these species to be a shaman's most important animals (Zvelebil 2003a; b; Klassen et al. 2020a). While such a direct historical analogy should, in general, obviously be applied with caution, in this particular case, and in this area in question, there is indeed evidence for a remarkable stability of such beliefs through long periods of time (Jordan 2003, 130; see Klassen et al. 2020a, 455–464), which justifies the approach adopted here.

The emergence of the PWC in the Danish regions bordering the Kattegat reflects contacts with PWC groups to the east and northeast. The culture has its roots in the Pit-Comb Ware culture of northeastern Europe (Iversen 2010, 28–30). This is evident from its material culture and in the complete or partial reversion to hunting (especially of seals) as a subsistence base in the PWC. The identification at Kainsbakke of shamanistic rituals (including those involving bears) typical of northeast European/western Siberian hunter-gatherer societies therefore fits well into the overall picture of the cultural development in the Kattegat region during the early 3rd millennium BC. At the same time, it poses several questions about the human-bear relationship during the earlier parts of prehistory in Denmark, which will be addressed below.

Was the performance of bear rituals by Neolithic communities in Denmark specific to the PWC, with its pronounced contacts with hunter-gatherer societies? Or is it also possible to identify traces of bear rituals in the Funnel Beaker culture (FBC), which had its roots in the central European Neolithic? Moreover, is there any evidence for the ritual significance of bears in hunter-gatherer communities earlier in southern Scandinavian prehistory? The latter question is relevant in the light of the abundant evidence of ritual depositions of elk bones/carcasses in the Early Mesolithic Maglemose culture (MMC), indicating shamanistic traditions that were at least related to those evident at Kainsbakke. As noted by K. Buck Pedersen and E. Brinch Petersen in a recent paper dealing with the elk depositions, the absence of bear counterparts from the same period is striking (Buck Pedersen/Brinch Petersen 2017, 251).

To provide answers to these questions, some simple studies were undertaken to evaluate the frequency of records of bear remains from the various cultures of the Danish Mesolithic and Neolithic

(constancy and relative importance of bears), followed by qualitative assessments of the types of bones represented, finds contexts, modes of deposition and treatment/handling of bones. All the available evidence is then assessed and interpreted in a concluding summary.

Geographical, chronological and methodological framework

In the following, the question of the human-bear relationship will be addressed for the entire Mesolithic (i.e. MMC, Kongemose [KMC] and Ertebølle [EBC] cultures) and the Neolithic (i.e. FBC and PWC). The date of the extinction of the brown bear as an indigenous species in Denmark is not entirely clear. Bear bones have been found with some regularity in PWC contexts up to *c.* 2700 cal BC, while there is only one later record from the Late Single Grave culture (SGC) site of Holme Skanse, dated to *c.* 2400 cal BC (Andersen 1983, 78; Richter 1986, 126). Archaeological sites with preserved faunal material are, however, exceptionally rare for at least the next 1,000 years, and bears might therefore still have been present (in Jutland) in the early 2nd millennium BC. Post-Neolithic finds predominantly comprise distal phalanges, which occur primarily in Iron Age graves, probably representing imported bear skins (Møhl 1978; Aaris-Sørensen 2009, 18; Henriksen 2009). In absolute terms this study therefore covers the time between *c.* 9500 and 2400 cal BC.

From a geographical point of view, the study concentrates on the area of present-day Denmark, but finds from the adjacent regions of southern Sweden (Halland, Scania, Blekinge) and northern Germany (Schleswig-Holstein, Mecklenburg-Western Pomerania) are also considered. While this focus on the area of a modern state is potentially misleading in a general prehistoric context, in the present case there is some justification. Bears lived in northern Germany until the Early Middle Ages (cf. Schmölcke, this volume), and the same is true for at least parts of southern Sweden (see Magnell, this volume; Iregren 1988). In Denmark, on the other hand, the bear disappears from the faunal record, as indigenous species, in the mid-3rd millennium BC in the western parts of the country (Jutland), and it became extinct on the islands constituting the central and eastern parts of Denmark considerably earlier than this, around 6000 cal BC (Aaris-Sørensen 1980; 1985; 1990). The present study therefore encompasses all the archaeological evidence for bears from the period when the species actually lived in Denmark. The subfossil record indicates that the first bears were present slightly earlier, during the Allerød period (Aaris-Sørensen 2009, 18), but these finds derive exclusively from natural deposits and consequently do not permit any conclusions to be drawn about the human-bear relationship. Such evidence may, however, be represented by the difficult-to-date amber figurines dealt with by Gross/Vang Petersen (this volume).

During the time in question, the bears of northern Germany and southern Sweden had direct contacts with much larger bear populations in the vast areas of adjacent land. The same can be said of the human populations, who may well have been influenced (also in their relationship with bears) by these contacts. Denmark, on the other hand, developed during the Atlantic period into an area characterised by proximity to the sea (less then *c.* 50 km from any point) and an extremely long and complex coastline (*c.* 6500–3900 cal BC). These circumstances have shaped human identity in the region ever since: Depictions of ships and boats on Bronze Age bronzes and rock art, Iron Age burials formed like a ship or boat, and a comprehensive archaeological record relating to ships and to waterborne trade and warfare in the Viking Age constitute just a few examples from prehistory. Consequently, they may also have been important for the human-bear relationship during large parts of the Mesolithic and Neolithic, as indicated by ethnographical evidence which identifies local ecological conditions as a factor which influences bear-related beliefs (Black 1998, 346). Within the timespan under investigation here, Denmark was only part of a larger landmass during the MMC, in the Preboreal (*c.* 9500–8200 cal BC) and Boreal (*c.* 8200–6500 cal BC) periods.

Table 1 presents the basic data for all records of bear remains from archaeological contexts in the regions and periods under investigation here. The dating is based on stratigraphic evidence and ^{14}C dates (Table 2), which in most, but not all, cases permit the bear remains to be assigned to a single archaeological culture; this also applies to finds from multi-period sites. There are 32 records from Denmark, 23 from southern Sweden, and 13 from northern Germany, and their distribution is shown in Figures 3–6. The general scarcity or absence of finds from the Danish islands from the KMC onwards is the result of the previously mentioned extinction of bears here in the Early Atlantic: The few records from these areas represent imported items. The total absence of finds from the KMC and MMC in western Denmark is due to the acidic nature of Jutland's bogs, which has resulted in dissolution of all bones from these periods, and therefore does not reflect an absence of bears and bear hunting. Coastal settlements of these periods are either inaccessible (MMC) or have not been excavated to any significant degree in Jutland (KMC: only two of the 58 definite or possible Danish assemblages from the KMC containing bones are from Jutland).

Records from the EBC and FBC in Jutland are almost all from coastal or near-coastal sites: The bones here have been preserved in either kitchen middens or natural chalk-rich sediments.

Bird and/or fish bones have also been found at most Danish and Swedish sites that have yielded bear finds. This shows that the presence or absence of specific (especially smaller) bear bones at these sites is due neither to adverse conditions of preservation nor excavation technique but is in general likely to represent the prehistoric situation to the same degree as this is reflected in the overall extent of the bone assemblages. The same can be said of coastal sites in northern Germany, while there is a lack of fragile bones at some of the inland sites in Mecklenburg.

The chronologically isolated record of bear bones from the Late SGC site of Holme Skanse has been excluded from the present study, because a single assemblage does not permit any conclusions to be drawn about a specific culture or period.

Quantitative assessment

Methodological considerations

The methods employed below to assess the quantitative importance of bears during the Danish Stone Age follow, with some adjustments, those used by U. Schmölcke (this volume) in his contribution on the history of bears in the northern part of central Europe. Two quantitative factors are examined: Constancy and the relative abundance of bear bones. Constancy is calculated as the number of sites of a given culture yielding bear finds relative to the total number of known sites with preserved bones from that culture, while the relative abundance is expressed as the percentage of bear bones in the total assemblage of mammal bones from a given site. For a true evaluation of the outcomes of both calculations it is important to bear in mind several methodological conditions and limitations imposed by the nature of the available source material.

In his calculations of bear abundance, Schmölcke (this volume) only uses counts of wild mammals for the Neolithic assemblages. Differentiation of wild and domestic forms of *Bos* and *Sus* is, however, problematic. Furthermore, the percentage of bears relative to other wild meat animals logically increases in the Neolithic, as a substantial part of the meat supply comes from domesticated animals. Employing calculations based solely on wild mammals therefore hinders a direct comparison between Neolithic and Mesolithic assemblages when, as in the present study, the overall importance of bears for various human groups is to be evaluated. The calculations undertaken here are therefore based on the total number of identified specimens (NISP) of both wild and domesticated mammals.

The total assemblage size is important in calculations of abundancy, especially for a rare species like the bear. From a statistical point of view, it is necessary to investigate 300 bones to obtain a 95 % probability of finding at least one bone of an animal that constitutes 1 % of the total assemblage:

$$P_X(0) = \binom{300}{0} 0{,}01^0(1 - 0{,}01)^{300-0} \approx 0.049$$

$$1 - 0.049 = 0.951 \approx 95\ \%$$

Calculations based on small assemblages are therefore in danger of yielding misleading results. Schmölcke (this volume) omitted assemblages with a total bone count of less than 200 from his calculations. In this study, the cut-off point has been raised to 300 bones, because Figure 7 (see below) suggests that unrealistically high bear frequencies (>2 %) are obtained for assemblages containing 200–300 bones.

One weakness associated with calculations of constancy when used to compare values for different periods is the underlying assumption that bone assemblages have had the same size distribution through time. This will hardly ever have been the case, and the calculations may therefore give skewed results with respect to constancy for rare species such as the bear, as the bones are more likely to be found in larger assemblages than in smaller ones.

Mixed assemblages represent a challenge to all the following calculations. Minor admixtures in assemblages from specific cultures must be assumed at most of the sites investigated here and do not present a major problem. The majority of the EBC records are, however, from sites that were also occupied during the Early FBC, in particular. The bone assemblages from these sites have typically been investigated/reported with no differentiation between these two cultural/chronological entities, while the bear bones have in almost all cases been assigned to the EBC occupation, either by stratigraphic observations or direct ^{14}C-dating. When comparing the percentage of bears in the EBC to that of other cultures, it must therefore be remembered that the numbers obtained are typically too low, due to the inevitable inclusion of FBC mammal bones in the calculations. The EBC part of the total assemblage is typically much greater than that of the FBC (due to several factors which affect and impact the upper layers of sites more than the lower ones, thereby leading to a greatly reduced FBC assemblage size). Deviations from the true values for the EBC can therefore generally be considered to be modest.

Mixed assemblages also present a challenge when enumerating the total number of bone assemblages from a specific culture employed in the calculations of the constancy of bear finds. The totals employed below are derived from the database of the Zoological Museum in Copenhagen (Table 3). Only finds that can definitely be assigned to either a single culture or to two, usually chronologically adjacent, cultures have been included. The latter have been weighted 50:50 in the site totals (e.g. a bone assemblage that can only be dated to either the EBC or the FBC contributes 0.5 points to the total for each of these two cultures). Uncertain finds and those with broad dating ranges have been excluded.

Finds complexes yielding imported bear bones have been omitted from the calculations, apart from Kainsbakke, where only some of the bear bones were imports. For both practical and methodological reasons, NISP (the number of identified specimens) is used instead of MNI (the minimum number of individuals) as a quantitative measure in the following. The MNI of bears in the assemblages recorded in Table 1 has only been determined in a few exceptional cases, while NISP is the only measure that is available for almost all assemblages. The decision to use NISP instead of MNI data also concurs with the methodological considerations of Makarewicz/Pleuger (2020, 281–282) with respect to the Kainsbakke assemblage.

Constancy of bear records

Constancy is presented as a range of values in Table 4, where these were calculated as a minimum (only sites with bear remains that can be ascribed to a single culture) and a maximum (including sites which may belong to either of two cultures).

Bear remains have been found at approximately one in six MMC settlements with preserved bones. There are no finds from Jutland and Funen (Fig. 3), but there is also a virtual absence of assemblages with preserved bones (only two are known from Funen, and none from Jutland). The constancy value given in Table 4 has therefore been calculated using data for Zealand only, but can nevertheless be assumed to be valid for the entire country.

A drastic decline is evident in the KMC, which is certainly at least partly due to the ongoing or possibly virtually complete extinction of bears on the Danish islands, the adverse conditions for the preservation of bones in Jutland, and the inadequate number of excavated coastal sites in the latter region: It does not necessarily indicate a situation drastically different from that during the MMC in those areas of Denmark where bears were still common. This conclusion is corroborated by the evidence from southern Sweden, where there are many finds of bears from KMC sites – both at coastal and inland locations (Table 1). It is not possible to calculate a reliable constancy rate for the parts of Denmark where bears must be assumed to have still been common (Jutland).

Due to the extinction of bears on the Danish islands, constancy for finds from the EBC has only been calculated for sites in Jutland. Only exceptional imports (Vedbæk-Bøgebakken, Syltholm) are known from the Danish islands. In Jutland, bear bones appear at one in eight to nine EBC sites with preserved bones. In the FBC, the same considerations regarding the regional extinction of bears apply as in the EBC, and the constancy has again only been calculated for Jutland. No less than four (or five) finds (nos. 9–12, and possibly no. 7, in Table 1) from islands close to Jutland must be perceived as imports, and they have therefore not been included in the calculations, leaving only between three and six sites in Jutland. Based on these numbers, constancy in the FBC is slightly lower than in the EBC, with bear bones appearing at one in seven to 13 sites. The true numbers are possibly somewhat lower, as a large percentage of the sites with finds potentially belonging to the FBC have been excluded from the calculations due to their very mixed character. The percentage of FBC sites considered is lower than that for all the other cultures (Table 4).

The constancy for bear finds in the PWC is exceptionally high, with the species being represented in 60–80 % of all known assemblages. Total numbers are small, and there is consequently a rather large statistical uncertainty. Four of the five assemblages from the Danish PWC with preserved bones are, however, either small or very small, but bear is still present in two of them (sites 2, 8). In Denmark, the PWC proper is only represented in Jutland, from where all known bone assemblages (with and without bear remains) derive.

While it is not possible to obtain any reliable numbers for the KMC, it appears that constancy declines continuously from the MMC to the FBC and then increases (possibly dramatically) in the PWC.

Abundance of bear remains

The relative abundance of bear bones at the individual sites is shown in Table 5, while Figure 7 gives a graphical representation. Table 6 presents averaged values for the individual cultures. Data for southern Sweden and northern Germany are included, because the number of Danish finds with available data is too small to give meaningful results.

The highest value is evident in the MMC, while a decreasing tendency is apparent in the succeeding Mesolithic periods. Values rise again in the FBC, and the second highest figure is seen in the PWC. But, as discussed above, the numbers estimated for the EBC are probably too low. Furthermore, a closer look at the FBC finds reveals that the three highest values were all obtained for small

assemblages from Mecklenburg-Western Pomerania. It therefore appears that the FBC values for this region are not representative for Denmark. When the three assemblages in question are omitted from the calculation, the average abundance of bears at FBC sites is only 0.16. It therefore seems likely that the relative abundance of bears, at least at Danish sites, decreases from the MMC and throughout the entire Mesolithic, reaching its lowest values in the FBC, after which it increases again markedly in the PWC. Due to the lack of data for Denmark, the assessment of the KMC is based on data from southern Sweden.

Quantity of bear finds: Concluding summary

Due to the methodological uncertainties outlined above, as well as the (in some cases) statistically weak nature of the database, not too much emphasis should be placed on either of these two results when viewed in isolation. Nevertheless, it is remarkable that the two quantitative approaches yielded identical results, indicating a decreasing number of bears in the archaeological record from the MMC up to, and including, the FBC, followed by a possibly steep increase in the PWC.

The decreasing tendency throughout the Mesolithic and early parts of the Neolithic probably results from a combination of several factors. The natural environment during the MMC was well-suited as bear habitat, and only inland sites from this period are known. In the EBC, on the other hand, the economic focus had shifted to the marine environment created by Atlantic transgressions, and almost all the EBC assemblages with preserved bones are from coastal sites. Furthermore, bears had become extinct on the Danish islands, and their numbers may also have begun to decrease in the forests of Jutland, relative to the situation in the Boreal and Preboreal periods. In the subsequent Neolithic, settlements remained focused in coastal and near-coastal areas, with few known bone assemblages from inland sites. Moreover, Neolithic farmers destroyed bear habitats by clearing woodland for arable land and pasture and thereby probably contributed to a further decline in bear populations. The high constancy and relative abundance of bear finds in the PWC is at odds with all these prevailing factors, as woodland destruction was already well advanced at this point in time (at least in parts of Jutland), while the economic focus had at least partly shifted back to the marine environment, and all known bone assemblages derive from coastal sites.

Qualitative assessment

Skeletal element representation

Table 7 shows the presence of various bear skeletal elements at Mesolithic and Neolithic sites in Denmark and adjacent regions. Sites with uncertain or extremely broad dates have been omitted. In addition, several sites listed in Table 1 could not be included due to a lack of published or otherwise accessible information. The remaining 55 sites have been ordered chronologically to enable any potential development through time to be traced.

Two groups of skeletal elements must be discussed separately from the rest: teeth and third phalanges. Teeth are by far the most frequent finds, with a total of 78 recorded examples. They are abundant throughout the entire Mesolithic and Neolithic, being found at settlements, ritual sites and in graves, and no differences between the individual cultures are apparent. Teeth have been used as ornaments, either sewn onto clothes or perforated and strung on necklaces etc., and these items have also been exchanged with regions where bears no longer lived, for example the island of Zealand during the EBC. In general, it can be stated that the great frequency of teeth in the record demonstrates that bears were highly valued throughout the entire period under investigation here. This is true of both the area of present-day Denmark and the adjacent regions.

Bear phalanges are usually interpreted as indicating the presence of bear pelts rather than entire bears. This question has been discussed intensively in relation to Iron Age grave finds (predominantly cremations, but also inhumation graves) in the area of present-day Denmark (see above), as well as more northerly parts of Scandinavia (e.g. Petré/Wigardt 1973; Petré 1980; Grimm 2013) and central Europe (e.g. Kühl 1984; Beermann 2016). There is, however, also at least one record of distal bear phalanges from a Neolithic cremation grave in northwest Germany, indicating the incineration of a human corpse and a bear skin (Bärenfänger 2009). The evidence referred to above demonstrates that only the third phalanges remained with the pelt on skinning. Table 7 shows that distal phalanges are rather rare among the records of bear remains. This scarcity cannot be explained by their small size, as the first and second phalanges, which are of similar size, are rather (second phalanx) or considerably (first phalanx) more frequent in the record. Furthermore, given their distinctive, claw-like shape, third phalanges are easily recognisable when excavated. Records of isolated third phalanges (i.e. without either the first or second phalanges) are only known from the Early Mesolithic and the Neolithic, with records from three sites in each case. A closer look at the Neolithic evidence shows that one record is from the extreme southern periphery of the study area (Mecklenburg), while another is a perforated example from a passage grave (Dræby Mark). The latter indicates an (exchanged) ornament rather than a bear skin. This leaves two examples from the Kainsbakke site as the only evidence for bear skins in the entire Danish Neolithic. In many societies in the northern hemisphere where ethnographical studies have been undertaken, the bear's skin is one of the ritually preserved body parts (Black 1998, 346), and this may provide an explanatory model for the occurrence of bear skins at Kainsbakke. It can be concluded that the Early Mesolithic was apparently the only period when such skins entered the archaeological record from ordinary settlements with some regularity.

As only the third phalanges potentially bear witness to the presence of bear skins, the first and second phalanges can be assumed to indicate the presence of bear feet, and they will therefore be discussed together with the metapodials and other bones making up the paws. In general, the first and second phalanges are frequently encountered at settlements in all the periods and in all the regions under investigation here – with the remarkable exception of MMC settlements, where they are extremely rare. This absence is hardly coincidental, as carpals/metacarpals, as well as tarsals/metatarsals, have frequently been found at MMC settlements, and several have yielded extremely large assemblages. Most of the MMC sites discussed here were excavated in the first half of the 20th century, and the observed lack of first and second phalanges may therefore be a consequence of the excavation technique employed at that time. Third phalanges of bears, as well similarly sized or smaller fish and bird bones, have, however, been recovered from some of these settlements. It is therefore possible that the absence of the first and second phalanges either result from a period- or culture-specific technique employed in skinning and dismembering bear carcasses, whereby these elements of no nutritional value were possibly left at the kill site. Alternatively, it may reflect a taboo or a specific, possibly ritualised, treatment of this part of the bear feet, which prevented this element from entering the archaeological record for settlements.

When looking at the representation of fore- and hind feet, some clear differences are evident in the relative numbers, together with some obvious chronological variations. Forefeet are rare at Neolithic sites but much more frequent at those of the Mesolithic, while the reverse is true of hind feet, being rather common in the Neolithic, and clearly more frequent than forefeet, while the opposite is the case in the Mesolithic.

Distinct differences can also be observed in the presence of skeletal elements representing the hind- and forelimbs. Hindlimbs are, in general, extremely rare at settlements of the Neolithic and the EBC. The PWC may represent an exception to this general picture, as bones from the hindlimbs have been encountered at two of four/five sites. These sites are either geographically peripheral (Nymölla II) or ritual in nature (Kainsbakke). Bones representing the hindlimbs are moderately abundant (Swedish

KMC) or even frequent (MMC) in earlier parts of the Mesolithic, while the picture for forelimbs is quite different. The latter are moderately abundant or frequent in the Neolithic (especially the PWC) and the EBC, and also well represented in the earlier parts of the Mesolithic. It therefore seems that all meat-bearing parts of the animal were taken back to the settlements in the earlier parts of the Mesolithic, while some form of selection took place in the Late Mesolithic and Neolithic.

When the evidence for the presence of feet and limbs is combined, some specific patterns emerge. Bones from the forefeet are extremely rare during the Neolithic and EBC, while those of the forelimbs are rather frequent. The situation regarding the hindlimbs and feet is, on the other hand, the direct opposite: Bones from the hind feet are frequent, while those representing the hindlimbs are virtually absent. The finds from FBC and EBC sites show a similar pattern, while the evidence from the PWC possibly deviates somewhat, even though it retains a basic similarity. The almost mutually exclusive occurrence of bones from the forefeet and forelimbs and from the hind feet and hindlimbs during the Late Mesolithic and Neolithic is striking and probably reflects a ritually guided selection of which specific parts of the bear were permitted or not permitted at the settlements. The specific importance of the paws in ritual activities is especially well documented ethnographically (see Mansrud, this volume; Hallowell 1926 for numerous examples). In the earlier parts of the Mesolithic, bears were obviously treated differently with respect to their limbs and paws. Both forelimbs and forefeet are roughly evenly represented and abundant, and the same is true to some degree of the hindlimbs and feet, although the extremely high frequency of hindlimb bones at MMC settlements is exceptional. There is no direct evidence for these body parts having a ritual significance.

Records of bones from the bear's torso are extremely rare in the Neolithic and the EBC, while they are moderately frequent in the earlier parts of the Mesolithic.

Records of cranial bones and mandibles are infrequent in the Neolithic, especially when two FBC records from inland sites in Mecklenburg, i.e. on the periphery of the study area, are disregarded. The deposition of these bones may have been guided by factors other than those operating in southern Scandinavia. Cranial elements and/or mandibles have only been found at ritual sites in Denmark: Kainsbakke (see above) and Hygind (Andersen 1988; 1989). The Hygind causewayed enclosure is located on the island of Funen, and the bear bones (exclusively cranial fragments and a tooth) were therefore imported items. It can also be demonstrated that some of the cranial parts found at Kainsbakke were imported (Klassen et al. 2020b; Price et al. 2021). An atlas bone found at a third Neolithic ritual site at Ginnerup, a few kilometres distant from Kainsbakke, can possibly be added to this list, as the atlas is the first vertebra in the vertebral column and directly adjacent to the skull. Furthermore, the ring-shaped morphology of this bone is distinctively different from all other vertebrae. There is therefore clear evidence for the ritual importance of bear heads in the Danish Neolithic, which concurs with the general ethnographical information (Black 1998, 346). A similar situation in the Swedish PWC is evident from the deposition of bear cranial bones in a pottery vessel at Äs, outside the study area (Lepiksaar 1974, 150), and the final record of Neolithic cranial remains from the Swedish PWC site of Nymölla/Möllehusen II, listed in Table 7, therefore probably also has ritual connotations. The EBC site of Ringkloster is remarkable in that it yielded an entire bear cranium (Fig. 8). Apart from those found at Kainsbakke, this is the only example of its kind in the entire archaeological record. The second record of cranial bones in an EBC context is from the Virksund kitchen midden. These form part of a tiny bone assemblage from a very early (1860s) excavation and are therefore difficult to evaluate. Nevertheless, in general it can be concluded that cranial bones, together with bones from the limbs and paws, probably constitute the second group of skeletal elements indicating related ritual ideas in the Late Mesolithic and Neolithic.

Cranial bones and mandibles are more frequent in the earlier parts of the Mesolithic, and even common in the MMC. This shows that the bear heads were either less ritually important in the earlier Mesolithic than in the Late Mesolithic and Neolithic or, perhaps more likely in the light of ethno-

graphical evidence, their ritual meaning and treatment differed from the situation in the later parts of the study period.

Finds contexts, modes of deposition and treatment of bones

All records of bear bones from the MMC derive from ordinary settlements, and there are no reports of any unusual modes of deposition. A mandible from the Øgaarde site (Degerbøl 1943, 182–183 fig. 93) had been marrow-fractured, but there are no other reports of marrow-fracturing in the material addressed here. This underlines the conclusion that bear mandibles were treated differently in the MMC relative to all the other periods.

Due to the almost complete lack of finds, it is not possible to make any statements about the handling of bear bones in the Danish KMC. The southern Swedish KMC records are all from settlements, and no unusual modes of deposition have been reported. From the time of the later KMC there is, however, a ritual site with clear evidence for the ritual importance of bears located at Kanaljorden, Motala (Östergötland), approximately 200 km north of the study area (Hallgren/Fornander 2016; Gummesson et al. 2018). In addition to human skulls mounted on poles, a number of faunal remains were found on a stone packing located in shallow water in a small lake. Of these, the bear remains attract particular attention due to their distinctive character. Not only were they especially numerous at this site, but these bones were also deposited spatially apart from those of the other species. The only parallels to the remarkably large number of ribs, vertebrae, and mandibles in this combination are found at settlements of the MMC, from which the Kanaljorden deposition does, however, differ due to the almost total absence of elements from the hindlimbs.

The evidence for the EBC is more diverse. In addition to actual settlement finds, there are several examples of the ritual treatment and demonstrated social importance of bear bones. The cranium found at Ringkloster in eastern Jutland has already been mentioned, and a bear tarsal was found in grave X at the Skateholm I cemetery in Scania. A tooth pendant found in a grave at Vedbæk-Bøgebakken (Aaris-Sørensen 1980) is the earliest recorded instance of the exchange of bear elements. A bear fibula found at Sylteholm on Lolland (unpublished; information courtesy of Museum Lolland-Falster) may constitute a second example of exchange during the EBC, but this bone may also date from the Early FBC.

There is increasing evidence for the exchange of bear bones in the FBC. Examples (apart from the possible find at Sylteholm) comprise teeth (Spodsbjerg), an ornament or amulet from a grave (perforated third phalanx from the Dræby Mark passage grave), at least one skull or parts of it (Hygind), tarsals (Lindø), and forelimb elements (Bundsø). The latter may represent the exchange of a rare and prestigious joint of meat, but the context in which it was found, a settlement located on the site of a causewayed enclosure, possibly draws parallels with the cranial elements from Hygind. The perforated metatarsus from Heidmoor-Wolkenwehe in northern Germany (Ewersen 2007, 293, 305 Taf. 2.3) belongs typologically to a group of metapodial-pendants that have typically been produced from the bones of other species (e.g. Lehmkuhl 1987). It is, however, an outlier in this group, with respect to both animal species and where it was found, as the main distribution area for metapodial-pendants is Switzerland and east-central Germany.

The abundant evidence for the ritual character of the PWC bear bones found at Kainsbakke, and the fact that the possible PWC atlas bone from Ginnerup was also found at a ritual site, has already been mentioned. The two remaining Danish records from this culture appear to be from actual settlements and the same is true for the remains from the Swedish site of Möllehusen/Nymölla II.

Changing patterns in the human-bear relationship during the Danish Mesolithic and Neolithic

As is evident from the above overview, there are considerable differences between the individual Mesolithic and Neolithic cultures in Denmark with regard to the representation of bear bones in the archaeological record. These differences doubtlessly reflect, at least in part, changing patterns in the human-bear relationship through time. Nevertheless, changes in the natural environment, the early extinction of bears in parts of the study area (probably at least partly due to contact between humans and bears) and the uneven representation of various types of sites in time and space do, however, create a complex background against which the observed variations must be evaluated. In the following, an attempt will be made to paint a picture, using a broad brush, of the changes in the human-bear relationship through the Danish Mesolithic and Neolithic, while the evidence from adjacent regions will primarily be used to qualify this picture.

The archaeological record for the MMC represents groups of forest dwellers with an economy adapted to that specific environment and to the opportunities offered by bodies of fresh water. Bears were hunted on rare occasions and in very modest numbers, compared to other game. Apart from the first and second phalanges, all bear body parts are represented in the archaeological record, with no obvious signs of ritual selection or other related activities. The only possible exception to this is a single marrow-fractured mandible (one of ten known mandibles from MMC context). Given the enormous body of ethnographical and historical evidence about the ritual significance of bears in the hunter-gatherer societies of the northern hemisphere, it would certainly be incorrect, based on the present evidence, to conclude that bears were viewed simply as ordinary (though rare) game by MMC people. There is every reason to believe that specific rituals were performed before, during and after the bear hunt. The relative ritual importance of the bear may, however, have been less than that evident from the archaeological record for later cultures. Especially in relation to Neolithic groups, this may be explained by the fact that hunting and gathering were the only sources of food during the MMC, and that the obviously ritually important elk (Buck Pedersen/Brinch Petersen 2017) was, according to the ethnographical record for northeastern Europe, often connected with beliefs associated with the reproduction of game animals (Zvelebil 2003a; b). A second possibility is that the bear figurines (cf. Gross/Vang Petersen, this volume) which, at least potentially, might date from the time of the MMC, may reflect specific beliefs and bear rituals. Finally, it is possible that bear rituals could have been performed at specific ritual sites in natural settings and at locations spatially distinct from those of the settlements – sites that may not yet have been discovered. The potential existence of such sites is indicated by the KMC locality at Kanaljorden mentioned above.

Due to the lack of evidence, it is not possible to evaluate directly the human-bear relationship during the Danish KMC. In southern Sweden, the record for this period resembles that of the preceding MMC. This is an interesting observation because the finds derive partly from ecological settings that differ completely from those encountered during the MMC (i.e. coastal settlements). The evidence from these KMC coastal settlements is notably dissimilar to that from the coastal sites of the subsequent EBC and FBC. This can be cautiously interpreted as indicating a certain degree of continuity of MMC traditions with respect to the treatment of bears in the KMC. There are no obvious signs of ritual activities associated with bears in the faunal record for the study area (but see remarks above regarding the Kanaljorden site).

While there are various indications of continuity from the earlier parts of the Mesolithic, different rules appear to have governed the selection and treatment of bear bones in the EBC. Definite signs of bear rituals are now detectable for the first time in the Danish faunal record, especially with regard to the treatment of crania, limbs and paws. These indicate changes in the human-bear relationship during the EBC, which may reflect several factors. The strong marine orientation of the EBC follow-

ing drastic changes to the natural environment may well have prompted changes in attitude towards woodland game. Furthermore, bears had completely disappeared from eastern Denmark, and encounters with these animals in Jutland may have become increasingly rare. There is also a third factor that should not be overlooked. Distinct elements of cultural traditions from the eastern/northeastern Baltic, such as pottery, elk-antler hammers and specific burial customs, became incorporated into the EBC (Klassen 2004, 109–120, 136–139). As demonstrated by the archaeological record for the PWC (see below), specific beliefs in relation to bears which originated in these regions may well have accompanied these cultural influences and may therefore be responsible for the observed changes in the treatment of bears.

In general, the evidence for the human-bear relationship during the FBC is characterised by continuity from the EBC, i.e. the selection/rejection of specific body parts and the ritual emphasis placed on bear heads and their treatment. This demonstrates that beliefs rooted in hunter-gatherer societies lived on in a (semi-)agricultural society, thereby possibly indicating a considerable degree of population continuity across the Mesolithic-Neolithic transition. Bears are even less common in FBC contexts, and, at the same time, there is strong evidence for an increased social valorisation of bear remains. While the exchange of such remains in the EBC can only be demonstrated in one or possibly two cases, there is evidence in the FBC for exchange of skulls, teeth, ornaments made from third phalanges, the bones of the hind feet, and possibly fibulas. Further hints may be provided by the peculiar geographical distribution of the FBC bear remains. These appear in marked concentrations on the Djursland peninsula, in southeastern Jutland and adjacent islands, and in eastern Holstein (Fig. 6). All three regions are hotspots for Neolithic research, which may well explain the observed concentrations, just as the small number of FBC sites with preserved bones in Jutland may explain the absence of bear remains from other parts of the peninsula. However, the constancy of bear finds on Djursland and in southeastern Jutland and adjacent islands appears to be extremely high when compared to the general value calculated for Jutland. There are three records of bear remains from the islands south of Funen, out of 11 sites with preserved bones (27 %) in the region (Nyegaard 1985), whereas on Djursland there are three or four FBC sites with bear remains, out of 13 sites with preserved bones (23–31 %). The concentration of bear finds, at least in these two distinct regional concentrations, appears therefore to be not solely a result of research intensity and favourable conditions for preservation. This conclusion is possibly supported by the distribution pattern for southeastern Jutland and adjacent islands (bear records from the Middle Neolithic FBC) and that for eastern Holstein and adjacent islands (Early Neolithic FBC or possibly Middle/Late EBC). The distribution pattern for bear bones in the northernmost of these two regions, which includes many instances of imported bones on the islands, resembles that for imported, socially valorised exotic items (copper flat axes and various types of central European stone artefacts; cf. Fig. 9a) which circulated here and in adjacent parts of northern Germany during the later parts of the EBC and Early FBC. It is therefore possible that the distribution of bear bones in the region indicates the continued existence of a probably ritualised exchange system and that these bones were treated like other socially valorised items and circulated between coastal groups in the area. In the same way, the distribution of Early Neolithic or Late EBC bear bones in eastern Holstein and the adjacent island of Lolland resembles that of specific types of imported Late Ertebølle/Early Neolithic stone tools (Fig. 9b) across the Femern Belt. Irrespective of the question of the existence of exchange systems, it is obvious from the comparatively large number of sites yielding imported bones or teeth that bears were subjected to special attention during the FBC in the region, even though this was possibly only done in specific groups.

The large number of bones found at coastal sites, despite the probable scarcity of bears (in Denmark), especially in the densely populated coastal regions, the efforts made to obtain bear bones from other areas and other aspects, especially at Kainsbakke, indicate a marked shift in, or intensification

of, the human-bear relationship during the genesis of the PWC in Denmark. As already mentioned, the ritual significance of bears is also evident in the eastern Swedish distribution area of the PWC, and further evidence from Norway (amber figurine from Linnes, cf. Gross/Vang Petersen, this volume) can probably be added to this. The ritual focus on bears during the PWC must, without doubt, derive from the culture's roots in the Pit-Comb Ware culture complex of northeastern Europe, from which there are numerous depictions and figurines of bears (Wyszomirska 1984; cf. also Gross/Vang Petersen, this volume). The combination of bears, elks, and a rare waterbird found in the ritual assemblage at Kainsbakke points in the same direction as indicated by both the archaeological (rock art: Tansem/Johansen 2008; Helskog 2012) and ethnographical data (see above).

In conclusion, it appears that the human-bear relationship in Denmark may have passed through several stages. In an early phase, represented by the MMC and possibly at least partly by the KMC, the bear appears to have been a rare but still regularly hunted animal. There is no direct evidence (from Denmark) indicating that it had any special ritual role, but in the light of abundant ethnographical evidence it seems likely that the bear hunt, and use of the animal in general, was strictly regulated by complex sets of beliefs and rituals.

The first definite archaeological evidence for specialised bear rituals appears in the EBC. At the same time, finds from Zealand and Scania of "hammers" made of elk antler, interpreted as the drumsticks of shamans, indicate a distinct influence on southern Scandinavia from the shamanistic traditions of the eastern Baltic (Vang Petersen 1990, 19–20; 1998, 95ff; Timofeev 1998a, 228–230; 1998b, 44–46; Klassen 2004, 119–120). It is possibly no coincidence that the marked emphasis on bear rituals evident in the PWC in Denmark also coincides with clearly detectable influences from the eastern Baltic, including shamanistic rituals involving the elk. The changes in the human-bear relationship in Denmark through time therefore probably reflect a combination of ecological change, human impact on bear habitats and shifting cultural impact from neighbouring regions, especially the eastern Baltic. Whether contacts to the south had the same impact, as possibly indicated by the incorporation of bear remains in the circulation of imported, socially valorised copper and stone artefacts, remains to be seen.

Acknowledgements

This paper draws on information collected in course of the CONTACT project (East Jutland Museum 2014–2019) founded by the VELUX foundation. Thanks to Søren H. Andersen for permitting publication of the bear cranium from Ringkloster, for providing important information on several other bear finds from Danish Ertebølle sites, and for valuable discussions. Museum Lolland-Falster is thanked for permission to mention the recently excavated find from Syltholm. Further information on Danish and Swedish finds of bears was provided by Leif Jonsson and Kristoffer Buck Pedersen. Jacob Kveiborg, Søren A. Sørensen, Oliver Grimm, Daniel Groß, and Torsten Madsen made valuable comments on earlier versions of this paper. Kasper Funch Dubery provided important assistance with probability statistics. The English language of the paper was revised by David E. Robinson.

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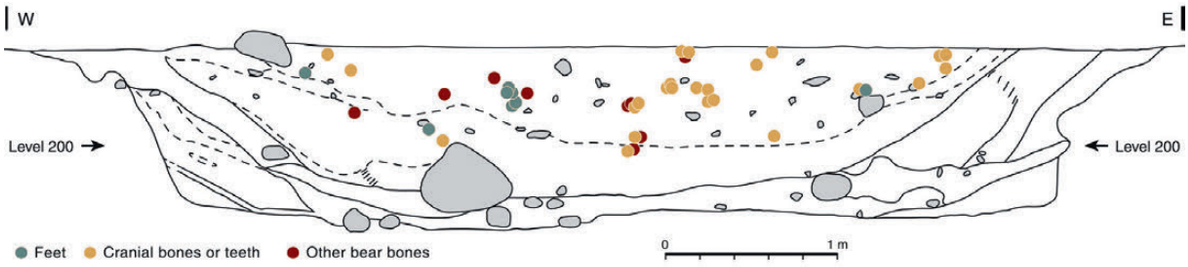


Fig. 1. The distribution of bear bones in pit A47 at the Kainsbakke site on the Djursland peninsula in Denmark, dated to the early 3rd millennium BC (after Wincentz *2020, 51 fig. 18).*



Fig. 2. Kainsbakke (Djursland, Denmark). Cranium of bear deposited on top of an aurochs horn core in the early 3rd millennium BC (photo L. Wincentz, after Wincentz *2020, 50 fig. 17).*



Fig. 3. Maglemose culture bear records from Denmark, southern Sweden, and northern Germany. Numbers refer to Table 1. Records that may belong to a chronologically adjacent culture are indicated by a lighter signature.



Fig. 4. Kongemose culture bear records from Denmark, southern Sweden, and northern Germany. Numbers refer to Table 1. Records that may belong to a chronologically adjacent culture are indicated by a lighter signature.



Fig. 5. Ertebølle culture bear records from Denmark, southern Sweden, and northern Germany. Numbers refer to Table 1. Records that may belong to a chronologically adjacent culture are indicated by a lighter signature.



Fig. 6. Neolithic bear records from Denmark, southern Sweden, and northern Germany. Numbers refer to Table 1. Red symbols: Funnel Beaker culture; blue symbols: Pitted Ware culture. Uncertain records or Funnel Beaker records that may belong to a chronologically adjacent culture are indicated by a lighter signature. The Holme Skanse site from the Late Single Grave culture is indicated by a yellow signature.

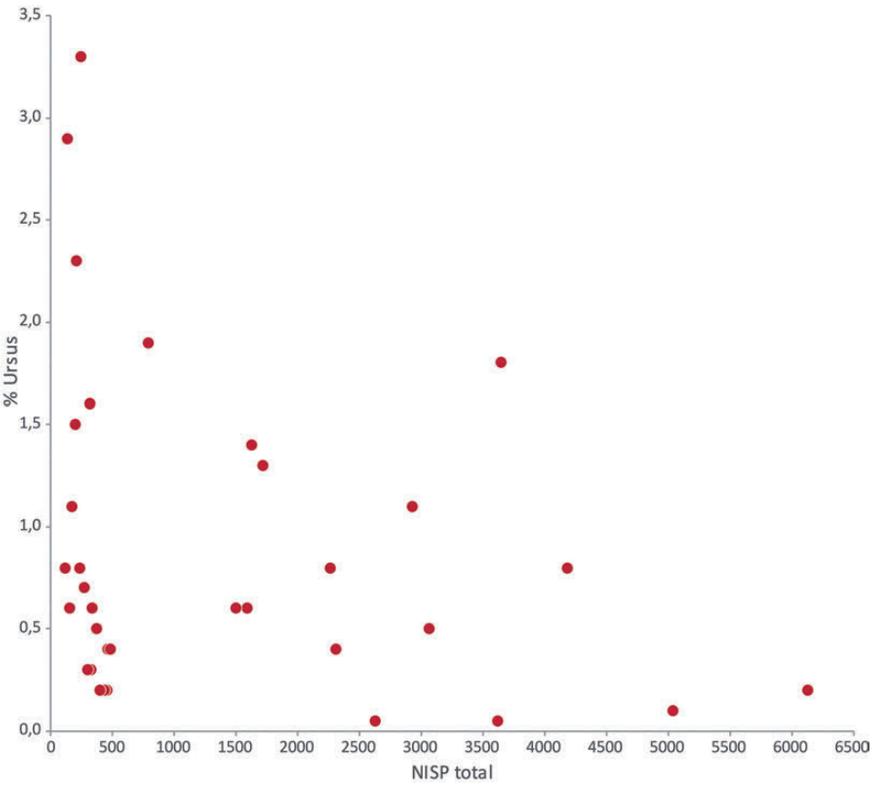


*Fig. 7. Relative abundance of bear (*Ursus*) bones at individual sites in Denmark, southern Sweden, and northern Germany. Data from Table 5. The Virksund site (%* Ursus *>16) has been omitted.*



Fig. 8. Bear cranium from the Late Mesolithic (Ertebølle culture) site of Ringkloster in eastern Jutland, dated to c. *4600 BC (courtesy of S. H. Andersen, photo Moesgaard Museum).*

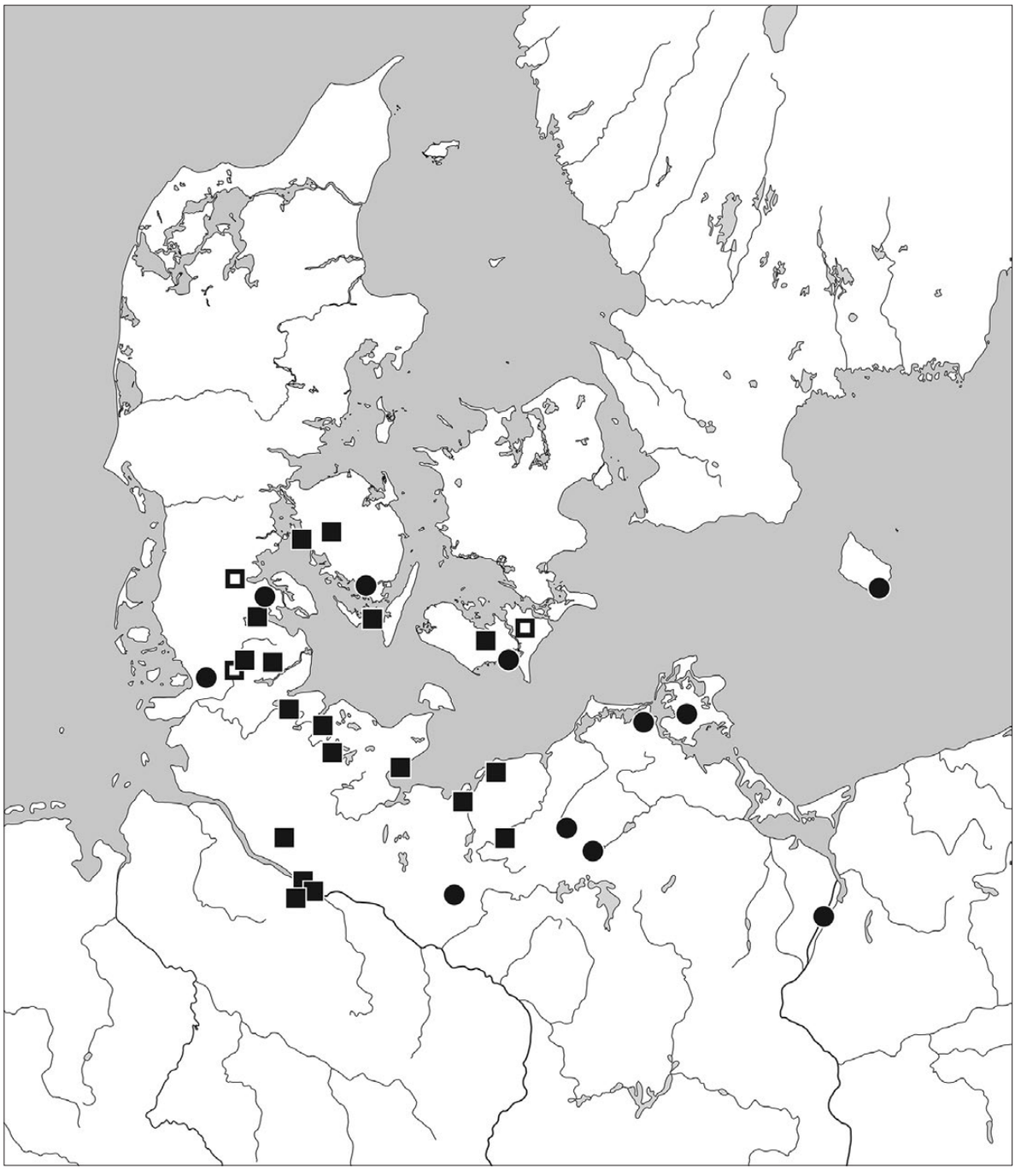


Fig. 9. a: Distribution of imported Danubian axes of Erikshale type (squares) and the earliest copper finds (circles) in the southwestern part of the Baltic, demonstrating the circulation of socially valorised items among coastal groups in the area during the Late Mesolithic/Early Neolithic. Open signatures indicate finds with imprecisely known find locations (after Klassen *2004, 319 fig. 153).*

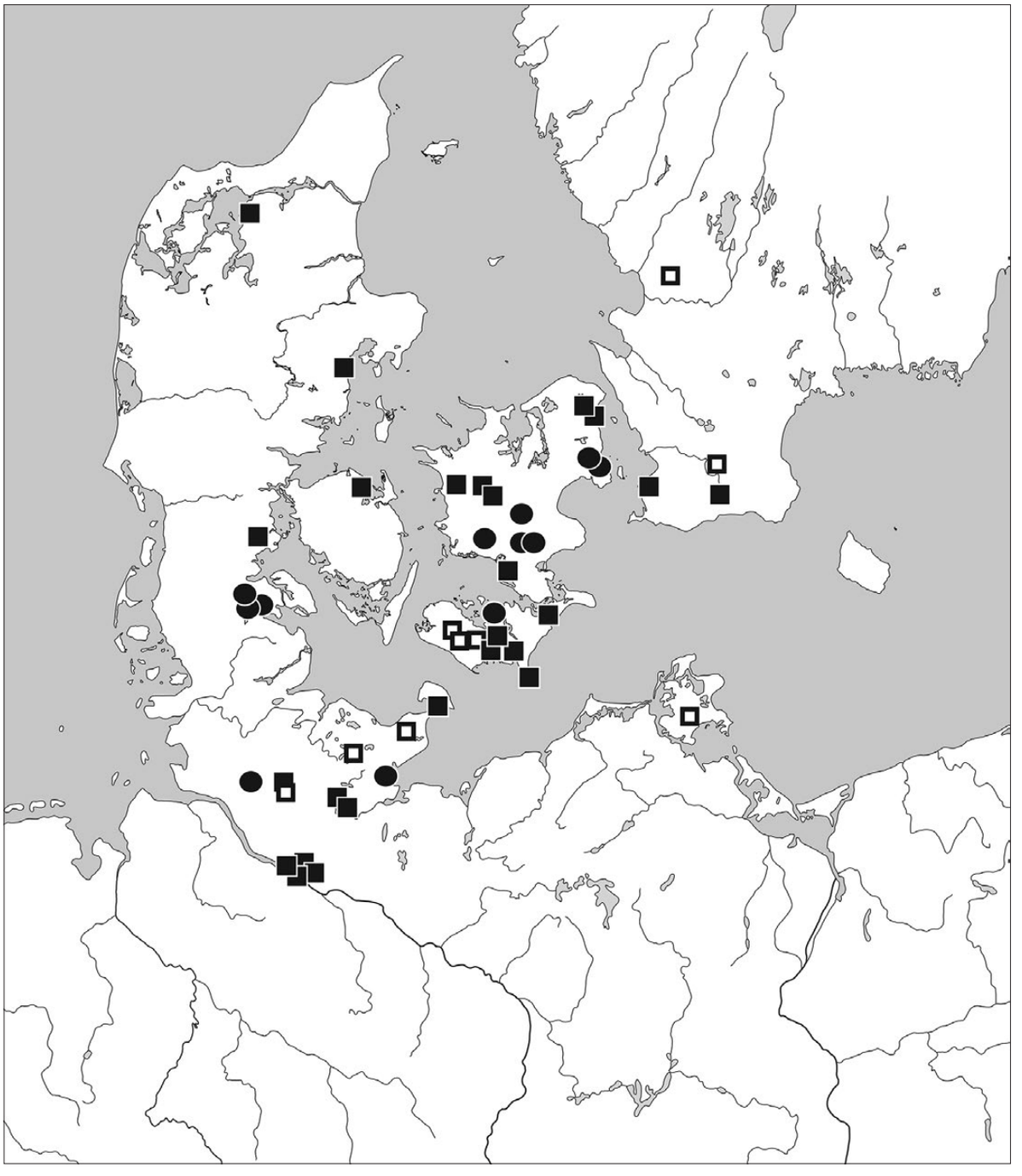


Fig. 9. b: Distribution of imported Danubian axes of the Böken, Neversdorf and Skeldby types (squares), as well as of axes of alpine rock (circles) in the southwestern Baltic, demonstrating an exchange across the Femern Belt during the Late Mesolithic/ Early Neolithic. Open signatures indicate finds with imprecisely known find locations (after Klassen *2004, 319 fig. 154).*

Table 1. Basic data for records of bear bones from archaeological contexts in Denmark, southern Sweden, and northern Germany dating from the Mesolithic and Neolithic (c. 9500–2600 BC). MMC = Maglemose culture; KMC = Kongemose culture; EBC = Ertebølle culture; FBC = Funnel Beaker culture; PWC = Pitted Ware culture; BAC = Battle Axe culture; SGC = Single Grave culture; MN = Middle Neolithic; EN = Early Neolithic; det. = determined by.

Site no.	Site	Province	Country	Type of site	Culture	Date BC cal	NISP *Ursus*	Site Location	Reference
1	Kainsbakke	Djursland	Denmark	Ritual site	PWC	3000–2800 BC	34	Coastal	Richter 1986; Makarewicz/Pleuger 2020
2	Kirial Bro	Djursland	Denmark	Settlement	PWC	3000–2800 BC	1	Coastal	Makarewicz/Pleuger 2020
3	Kolind	Djursland	Denmark	Settlement	FBC MN A	3330–2930 BC	1	Coastal	Degerbøl 1942; Klassen et al. 2020b
4	Ørum Aa	Djursland	Denmark	Settlement	FBC EN II	3630–3370 BC	2	Coastal	Madsen et al. 1900; Degerbøl 1939; Klassen et al. 2020b
5	Ginnerup	Djursland	Denmark	Ritual site	FBC-PWC	3200–3000 BC	1	Coastal	unpublished; Jakob Kveiborg det.
6	Lindegårds Mose	East Jutland	Denmark	Settlement	FBC EN	3800–3300 BC	3	Coastal	Skousen 2008
7	Bundsø	South Jutland	Denmark	Ritual site/ Settlement	FBC MN A	3340–2950 BC	4	Near coastal	Degerbøl 1939; Nyegaard 1985; Klassen et al. 2020b
8	Selbjerg	North Jutland	Denmark	Settlement	PWC	2880–2630 BC	1	Coastal	Marseen 1953; Klassen et al. 2020b
9	Hygind	Funen	Denmark	Ritual site	FBC EN II/MN A	3500–2800 BC	4	Near coastal	unpublished
10	Dræby Mark	Funen	Denmark	Grave	FBC MN A	3300–2800 BC	1	Near coastal	Broholm 1928; Jessen 1929; Degerbøl 1939
11	Spodsbjerg	Langeland	Denmark	Settlement	FBC MN A V	3000–2800 BC	1	Coastal	Nyegaard 1985
12	Lindø	Langeland	Denmark	Settlement	FBC MN A	3300–2800 BC	2	Near coastal	Degerbøl 1939; Nyegaard 1985
13	Øgaarde	Zealand	Denmark	Settlement	MMC	9000–6000 BC	12	Inland	Degerbøl 1943; Degerbøl/Krogh 1951
14	Dyrholmen	Djursland	Denmark	Settlement	Early EBC	5200–5000 BC	1	Coastal	Degerbøl 1942
15	Vedbæk-Bøgebakken	Zealand	Denmark	Grave	Early EBC	5300–4600 BC	1	Coastal	Aaris-Sørensen 1980
16	Virksund	North Jutland	Denmark	Settlement	Late EBC	4300–4000 BC	8	Coastal	Winge 1904; Bray et al. 2013
17	Bjørnsholm	North Jutland	Denmark	Settlement	Late EBC	4400–4150 BC	1	Coastal	Møhl 1978
18	Ringkloster	East Jutland	Denmark	Settlement	Middle/Late EBC	4600–4400 BC	5	Inland	Rowley-Conwy 1998; Glykou 2016; S.H. Andersen pers. comm.
19	Flynderhage	East Jutland	Denmark	Settlement	Middle/Late EBC	4600–4000 BC	1	Coastal	Aaris-Sørensen 1980; S.H. Andersen pers. comm.
20	Brabrand	East Jutland	Denmark	Settlement	Late EBC	4400–4000 BC	2	Coastal	Thomsen/Jessen 1906; Jessen 1929
21	Øster Jølby	North Jutland	Denmark	Settlement	EBC/FBC EN	5300–3300 BC	1	Coastal	S.H. Andersen pers. comm.
22	Kolding Fjord	East Jutland	Denmark	Settlement (?)	EBC/FBC	5300–2800 BC	1	Coastal	Jessen 1929

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Site no.	Site	Province	Country	Type of site	Culture	Date BC cal	NISP *Ursus*	Site Location	Reference
23	Kolind	Djursland	Denmark	Settlement	Early EBC	5300–4000 BC	1	Coastal	Degerbøl 1942
24	Mullerup	Zealand	Denmark	Settlement	MMC	9000–6000 BC	10	Inland	Sarauw 1903
25	Sværdborg Mose I	Zealand	Denmark	Settlement	MMC	9000–6000 BC	31	Inland	Friis Johansen 1919; Aaris-Sørensen 1976
26	Lundby I	Zealand	Denmark	Settlement	MMC	9000–6000 BC	2	Inland	Degerbøl 1933
27	Verup	Zealand	Denmark	Settlement	MMC	9000–6000 BC	2	Inland	Degerbøl/Krogh 1951; Andersen 1961
28	Holmegaard V	Zealand	Denmark	Settlement	MMC	9000–6000 BC	1 (?)	Inland	Iregren et al. 1990; K. M. Gregersen, pers. comm.
29	Gislinge Lammefjord	Zealand	Denmark	Settlement	KMC	6000–5300 BC	?	Coastal	Aaris-Sørensen 1980
30	Rävgrav	South Scania	Sweden	Settlement	FBC MN	3300–2800 BC	1	Coastal	Larsson 1985; Iregren 1988; L. Jonsson, pers. comm.
31	Nymölla/Møllehusen II	East Scania	Sweden	Settlement	PWC	3200–2500 BC	22	Coastal	Berlin 1941; Iregren 1988; Rosengren 2018
32	Hunneberget	East Scania	Sweden	Settlement	FBC MN ?	3300–2800 BC	1	Inland	Magnell 2007; Rosengren 2018
33	Sjöholmen	Central Scania	Sweden	Settlement	EBC/FBC EN	5300–3300 BC	16	Inland	Forssander 1930; Thomas 1954; Rosengren 2018
34	Skateholm I	South Scania	Sweden	Settlement (2), Grave (2)	EBC	5300–4000 BC	4	Coastal	Jonsson 1988; Rosengren 2018
35	Skateholm II	South Scania	Sweden	Grave	EBC	5300–4000 BC	1	Coastal	Jonsson 1988; Rosengren 2018
36	Limhamn	South Scania	Sweden	Settlement	EBC	5300–4000 BC	1	Coastal	Liljegren 1975; Salomonsson 1971
37	Bökeberg	Central Scania	Sweden	Settlement	EBC	5300–4000 BC	9	Inland	Ceglielka et al. 1995; Eriksson/Magnell 2001; Rosengren 2018
38	Önsvala	Central Scania	Sweden	Settlement	EBC/FBC EN/MN	5300–2800 BC	1	Inland	Lagergren-Olsson 2001; Rosengren 2018
39	Hyllie Fattiggård	South Scania	Sweden	Settlement	EBC/FBC EN	5300–3300 BC	1	Coastal	Salomonsson 1971
40	Nymölla/Møllehusen III	East Scania	Sweden	Settlement	EBC/FBC EN	5300–3300 BC	1	Coastal	Wyszomirska 1988; Rosengren 2018
41	Sjöholmen	Central Scania	Sweden	Settlement	EBC-BAC	5300–2400 BC	1	Inland	Brännborn et al. 2007; Rosengren 2018
42	Tågerup, fase III	West Scania	Sweden	Settlement	EBC	5300–4000 BC	2	Coastal	Eriksson/Magnell 2001; Rosengren 2018

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Site no.	Site	Province	Country	Type of site	Culture	Date BC cal	NISP *Ursus*	Site Location	Reference
43	Tågerup, fase II	West Scania	Sweden	Settlement	KMC-EBC	5600–5000 BC	8	Coastal	Eriksson/Magnell 2001; Rosengren 2018
44	Tågerup, fase I	East Scania	Sweden	Settlement	KMC	6000–5300 BC	23	Coastal	Eriksson/Magnell 2001; Rosengren 2018
45	Ringsjöholm	Central Scania	Sweden	Settlement	KMC	6000–5300 BC	16	Inland	Rosengren 2018
46	Arlöv I	South Scania	Sweden	Settlement	KMC	6000–5300 BC	2	Coastal	Salomonsson 1971; Lepiksaar 1983; Rosengren 2018
47	Ageröd V	Central Scania	Sweden	Settlement	KMC	6000–5300 BC	1	Inland	Rosengren 2018
48	Ageröd I:D	Central Scania	Sweden	Settlement	MMC-KMC	6400–5800 BC	2	Inland	Lepiksaar 1978; Rosengren 2018
49	Ageröd I:B	Central Scania	Sweden	Settlement	MMC-KMC	6400–5800 BC	5	Inland	Lepiksaar 1978; Rosengren 2018
50	Bredasten	South Scania	Sweden	Settlement	EBC	5300–4000 BC	10	Inland	Larsson 1986; Magnell 2006; Rosengren 2018
51	Ageröd I:HC	Central Scania	Sweden	Settlement	MMC	9000–6000 BC	65	Inland	Rosengren 2018
52	Segebro	South Scania	Sweden	Settlement	KMC	6000–5300 BC	17	Coastal	Lepiksaar 1982
53	Neukirchen-Bostholm	Schleswig	Germany	Settlement	FBC MN A III/IV	3200–3100 BC	1	Coastal	Reichstein 1985
54	Wolkenwehe-Heidmoor	Holstein	Germany	Settlement	FBC MN A V	3000–2800 BC	10	Inland	Ewersen 2007
55	Wangels	East Holstein	Germany	Settlement	FBC EN	4100–3800 BC	1	Coastal	Heinrich 1999
56	Siggeneben-Süd	East Holstein	Germany	Settlement	FBC EN	3800–3500 BC	1	Coastal	Heinrich 1999; U. Schmölcke pers. comm.
57	Neustadt i.H.	East Holstein	Germany	Settlement	FBC EN	4100–3500 BC	1	Coastal	Glykou 2016
58	Basedow	South Mecklenburg	Germany	Settlement	FBC MN A	3300–2800 BC	2	Inland	Gehl 1973
59	Waren-Stinthorst	South Mecklenburg	Germany	Settlement	FBC MN A (?)	3300–2800 BC	5	Inland	Gehl 1975
60	Glasow	Western Pomerania	Germany	Settlement	FBC MN A	3300–2800 BC	2	Inland	Gehl 1979
61	Ostorf	Mecklenburg	Germany	Graves	FBC MN A	3300–3000 BC	21	Inland	Lehmkuhl 2010
62	Hohen Viecheln	Mecklenburg	Germany	Settlement	MMC	9000–7000 BC	9	Inland	Schmölcke this volume
63	Bondebrück	Schleswig	Germany	Settlement	EBC	5300–4000 BC	1	Inland	Lüttschwager 1967

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Cont. Table 1.

Site no.	Site	Province	Country	Type of site	Culture	Date BC cal	NISP *Ursus*	Site Location	Reference
64	Tribsees	Western Pomerania	Germany	Settlement	MMC	9000–6000 BC	2	Inland	Lehmkuhl 1988
65	Kiel Ellerbek	Holstein	Germany	Settlement	EBC	5300–4000 BC	1	Coastal	Kurck 1917; Lüttschwager 1954
66	Lundby II	Zealand	Denmark	Settlement	MMC	8900–6400 BC	15	Inland	Rosenlund 1980
67	Holme Skanse	Djursland	Denmark	Settelemnt	Late SGC (?)	2400 BC (?)	4	Coastal	Andersen 1983; Richter 1986; S.H. Andersen, pers. comm.
68	Sylteholmen	Lolland	Denmark	Settlement	EBC/FBC	4700–3500 BC	1	Coastal	Unpublished; information courtesy Museum Lolland-Falster

Table 2. ^{14}C dates for remains of bears from archaeological contexts in Denmark. Dating attempts on several other finds (Lindegårds Mose, Ørum Aa, Hygind, Holme Skanse) failed due to lack of preserved collagen in the samples submitted for dating.

Site no.	Site name	Lab. no.	Date bp	Date BC cal (2δ)	Reference
3	Kolind	AAR-21420	4441 ± 29	3390–2930	Klassen et al. 2020b
4	Ørum Aa	AAR-21421	4450 ± 30	3630–3370	Klassen et al. 2020b
7	Bundsø	AAR-21416	4686 ± 29	3340–2950	Klassen et al. 2020b
8	Selbjerg	AAR-21415	4148 ± 29	2880–2630	Klassen et al. 2020b
14	Dyrholmen	AAR-21418	6165 ± 31	5220–5020	unpublished
16	Virksund	CURL-10287	5310 ± 20	4240–4050	Bray et al. 2013
17	Bjørnsholm	AAR-21422	5533 ± 31	4450–4340	unpublished

Table 3. Number of assemblages containing preserved bones, number of assemblages included after removal of mixed localities, site totals employed in calculations of bear constancy and abundance, and percentage of selected assemblages in relation to all known sites (including very mixed assemblages), based on records held at the Zoological Museum in Copenhagen. For abbreviations, see Table 1.

	MMC	KMC	EBC	FBC	PWC
All sites	58	65	230	430	5
Selected sites	46	58	208	286	5
Site total	43.5	46	181.5	213.5	5
Percentage of selected sites	79.3	89.2	90.4	66.5	100

Table 4. Constancy of bear records in the Danish Stone Age. For abbreviations, see Table 1.

	Sites with bear bones	Sites with preserved bones	Constancy
PWC	3 (4) (Jutland only)	5 (Jutland)	60–80 % (Jutland)
FBC	3 (6)	39 (Jutland)	7.7–15.4 % (Jutland)
EBC	7 (9) (Jutland only)	65.5 (Jutland)	10.7–13.7 % (Jutland)
KMC	1 (Zealand only)	43.5 (Zealand)	2.3 % (Zealand)
MMC	7 (Zealand only)	43.5 (Zealand)	16.1 % (Zealand)

Table 6. Average abundance of bear bones in the individual cultures based on the data in Table 5. For abbreviations, see Table 1.

	MMC	KMC (Sweden)	EBC	FBC incl. (excl.) Mecklenburg	PWC
n	4	5	6	8 (5)	3
% *Ursus*	1.34	0.69	0.32	0.41 (0.16)	0.80

Table 5. Number of bear bones (NISP Ursus*), assemblage size (NISP total) for mammal bones and abundance of bears (%* Ursus*) for sites in Denmark, southern Sweden, and northern Germany.*

Site no.	Site	Culture	NISP *Ursus*	NISP total	% *Ursus*
1	Kainsbakke	PWC	34	4,178	0.8
2	Kirial Bro	PWC	1	329	0.3
8	Selbjerg	PWC	1	<125	>0.8
31	Nymölla/Möllehusen II	PWC	22	1,717	1.3
11	Spodsbjerg	FBC MN	1	3,896	0.05
12	Lindø	FBC MN	3	>779	<0.4
54	Wolkenwehe-Heidmoor	FBC MN	10	6,125	0.2
58	Basedow	FBC MN	2	477	0.4
53	Neukirchen Bostholm	FBC MN	1	403	0.2
60	Glasow	FBC MN	2	339	0.6
59	Waren-Stinthorst	FBC MN	5	316	1.6
9	Hygind	FBC EN/MN	4	812	0.5
30	Rävgrav	FBC EN	1	2,630	0.05
6	Lindegårds Mose	FBC EN	3	205	1.5
57	Neustadt i.H.	FBC EN	1	>3,617	0.05
55	Wangels	FBC EN	1	446	0.2
56	Siggeneben-Süd	FBC EN	1	155	0.6
37	Bökeberg	EBC	9	1,594	0.6
50	Bredasten	EBC	10	2,309	0.4
34	Skateholm I	EBC	4	138	2.9
42	Tågerup phase III	EBC	2	463	0.4
55	Bondebrück	EBC	1	302	0.3
17	Bjørnsholm	EBC	1	>100	<1.0
20	Brabrand	EBC	2	>100	>2.0
18	Ringkloster	EBC	5	5,036	0.1
16	Virksund	EBC	8	<50	>16.0
14	Dyrholmen	EBC	1	>1,000	<0.1
43	Tågerup phase II	KMC	8	244	3.3
44	Tågerup phase I	KMC	23	1,627	1.4
45	Ringsjöholm	KMC	16	3,064	0.5
46	Arlöv I	KMC	2	371	0.5
47	Ageröd V	KMC	1	441	0.2
52	Segebro	KMC	17	2,262	0.8
49	Ageröd I:B	KMC	5	211	2.3
48	Ageröd I:D	KMC	2	179	1.1
66	Lundby II	MMC	15	791	1.9
25	Sværdborg I	MMC	31	2,923	1.1
27	Verup	MMC	2	240	0.8
28	Holmegaard V	MMC	few bones	3,452	?
51	Ageröd I:HC	MMC	65	3,649	1.8
64	Tribsees	MMC	2	277	0.7
62	Hohen Viecheln	MMC	9	1,498	0.6

Table 7. Distribution of individual skeletal elements. Sites are listed in approximate chronological order. Imprecisely dated sites and sites lacking information have been omitted. Note that the sum of bear bones for the individual sites is not necessarily identical to the number of bones given in Table 1 because the accessible bone identifications were, in some cases, inadequate. Some "phalanges" and "metapodials" included in the totals in Table 1 are missing. For abbreviations, see Table 1.

			Head			Forelimb			Hindlimb	
Site no.	**Site**	**Culture**	**Cranium**	**Mandible**	**Tooth**	**Scapula**	**Humerus**	**Ulna**	**Radius**	**Pelvis**
67	Holme Skanse	Late SGC								
8	Selbjerg	PWC							1	
1	Kainsbakke	PWC	9	5	5	1	1	2		2
2	Kirial Bro	PWC								
31	Nymölla/Mölle-husen II	PWC	1	1	1	1				
5	Ginnerup	FBC/PWC								
11	Spodsbjerg	FBC MN			1					
54	Wolkenwehe-Heidmoor	FBC MN			2	1			2	
53	Neukirchen-Bostholm	FBC MN								
3	Kolind	FBC MN								
7	Bundsø	FBC MN				1	1	1		
12	Lindø	FBC MN								
10	Dræby Mark	FBC MN								
58	Basedow	FBC MN			2					
59	Stinthorst	FBC MN	1		1					
60	Glasow	FBC MN	1							
61	Ostorf	FBC MN			21					
9	Hygind	FBC EN/MN	3		1					
30	Rävgrav	FBC EN/MN								
4	Ørum Aa	FBC EN/MN			1		1			
6	Lindegårds Mose	FBC EN								
56	Siggeneben-Süd	FBC EN	1							
68	Syltholm	FBC EN/EBC								
57	Neustadt i.H.	EBC/FBC EN							1	
17	Bjørnsholm	EBC/FBC EN						1		
16	Virksund	EBC	2	1	3					
20	Brabrand	EBC		1	1					
18	Ringkloster	EBC	1							
23	Kolind	EBC			1					
37	Bökeberg	EBC						1		
63	Bondebrück	EBC			1					
15	Vedbæk-Bøgebakken	EBC			1					
14	Dyrholmen	EBC								
50	Bredasten	EBC								
34	Skateholm I	EBC			2				1	
35	Skateholm II	EBC								
42	Tågerup fase III	EBC								

Hindlimb				Forefoot	Hindfoot	Torso		Phalanges		
Femur	Patella	Tibia	Fibula	Carpal/ Metacarpal	Tarsal/ Metatarsal	Vertebra	Rib	1st phalanx	2nd phalanx	3rd phalanx
			1	2						
	1				1			2	3	2
									1	
1				3	3	1		6	3	
						1				
			1		1	3				
								1		
					1					
					2			1		
										1
				2						
									1	1
					1					
					3					
			1							
				2						
		1		1	1			1		
				1	1	2	1	2	1	
						1				
				2	3	2				
								1		
					1					
								1	1	

Cont. Tab. 7. ▶

Cont. Tab. 7.

			Head			Forelimb			Hindlimb	
Site no.	**Site**	**Culture**	**Cranium**	**Mandible**	**Tooth**	**Scapula**	**Humerus**	**Ulna**	**Radius**	**Pelvis**
43	Tågerup fase II	EBC/KMC			6					
44	Tågerup fase I	KMC		1	6	2		1		
45	Ringsjöholm	KMC			4	1	1	2		1
46	Arlöv I	KMC		1						
47	Ageröd V	KMC								
52	Segebro	KMC		2			4			2
49	Ageröd I:B	KMC/MMC			4					
48	Ageröd I:D	KMC/MMC					1			
26	Lundby I	MMC								
66	Lundby II	MMC	8							1
13	Øgaarde	MMC		1	2				2	1
28	Holmegaard V	MMC								
25	Sværdborg I	MMC		1	3	2		2	1	
24	Mullerup	MMC	1	1	1		1	1	2	
27	Verup	MMC								
51	Ageröd I:HC	MMC	4	6	8	1	2	6		1
64	Tribsees	MMC			1					
62	Hohen Viecheln	MMC		1			2			1

Hindlimb				Forefoot	Hindfoot	Torso		Phalanges		
Femur	Patella	Tibia	Fibula	Carpal/ Metacarpal	Tarsal/ Metatarsal	Vertebra	Rib	1st phalanx	2nd phalanx	3rd phalanx
				1					1	
				5	4		1	2		
				2	3	3		1		
1										
								1		
				2	3	1		1		
								1		
				1						
2										
					1					
		1								
2	1	2		3						3
				2						2
						2				
1	1	4		7	3	7	8		3	1
		1								
1				2		1				

Bears and the Viking Age transition in Sweden

By John Ljungkvist and Karl-Johan Lindholm

Keywords: Sweden, brown bear, Ursus arctos*, Iron Age, Vendel period, Viking Age, The Bear in the Grave (BiG) database*

Abstract: The main objective of this paper is to generate a deeper understanding of bear and human relationships in the 1st millennium AD. This will primarily be achieved by the analysis of a detailed chronology of bear phalanges from Iron Age burials. The aim is to note changes in the deposition patterns of bear remains in burials in order to identify human impact – which we consider significant for hunting pressure – on the Scandinavian bear populations of the 1st millennium AD. The authors suggest that bear hunting can be considered as part of the larger processes of intensified exploitation of the boreal forest in the Iron Age that contributed to the formation of interregional trade networks. It is suggested that this exploitation affected the bear population to such an extent that overused animal resources can be understood as one of several contributing factors behind the Viking expansion outside Scandinavia. An understanding of bear and human relationships will contribute to a better knowledge of the cultural history of Scandinavia's forested region and of interregional contacts with the central agricultural regions.

Introduction

More than half of Scandinavia's land area consists of boreal forest composed of coniferous tree species, such as pine and spruce, mixed with broadleaf species, such as aspen and birch. The boreal forest covers a hilly and undulating topography interspersed by numerous lakes, rivers, streams and mires, with a climate characterised by long winters and short growing seasons. Archaeology and palaeoecology have discovered that the forested landscapes of inland Scandinavia contain a diverse and fairly repetitive record of archaeological sites related to the use of forest resources, such as game, fish, pasture, wood, fuel and minerals (see for example Emanuelsson et al. 2003; Kresten 2008; Ashby et al. 2015; Loftsgarden 2015; Hennius 2018; Baug et al. 2019). In general, the forested inland has been considered to have negligible importance for understanding the larger societal developments of Scandinavia's past, even if research has repeatedly noted connections between the inland central agricultural plains and the coastal areas. An explanation for this view is the less accentuated social elites in the archaeological record of the forested region and the small amount of written documentation prior to AD 1500. Moreover, the first permanent agrarian settlements have generally been perceived as belonging to the Viking Age (*c.* AD 750–1050) or the Middle Ages (*c.* AD 1050–1520). This is generally explained as the result of population growth and new technologies that facilitated farming in forested areas.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 387–404 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134342

This paper aims to contribute to a better understanding of the human exploitation of bears in the Scandinavian Iron Age. This will be achieved by the analysis of a detailed chronology of brown bear (*Ursus arctos*) phalanges retrieved from Iron Age burials. The paper builds upon a previously published study (Lindholm/Ljungkvist 2016), but it will provide a chronologically more precise analysis. The main objective of the paper is to generate a deeper understanding of changes in the deposition patterns of bears in burials in order to identify human impact – which we consider significant for hunting pressure – on the Scandinavian bear populations of the 1st millennium AD. A question to be asked is whether bear hunting can be considered as part of the larger processes of intensified exploitation of the boreal forest in the Iron Age that contributed to the formation of interregional trade networks. If so, could this exploitation have affected the bear population to such an extent that overused animal resources can be understood as one of several contributing factors behind the expansion of the Scandinavians in the Viking Age?

The analysis will be based on the Bear in the Grave (BiG) database, kept at Uppsala University.[1] It primarily covers Swedish finds of remains of large carnivorous and also herbivorous mammals in the size ranges of roe deer and lynx upwards, as well as finds of large wild birds, including birds of prey, and species such as grouse, capercaillie, and crane (for a detailed presentation see Lindholm/Ljungkvist 2016). The database also covers to some degree exotic imports or workshop-related finds of remains of, for example, whales and walruses. Settlement contexts sometimes also contain a variety of smaller wild birds or mammals that have been registered for future research. In addition, the database contains information on topography, county, parish, site location, and context (i.e. whether the find was associated with a settlement, grave, or another type of archaeological context). Further, if the context is a burial, the estimated sex of the buried person and the chronological phase attribution are indicated. The extent of the database also now permits us to compare the frequency of bear claws in different phases with similar patterns concerning birds of prey and lynx claws.

Background

Over the last decade, a growing body of research as well as increasing numbers of studies have begun to outline a new narrative concerning the historical and socio-economic developments of the boreal forests of inland Scandinavia. Lindholm et al. (2013) applied a spatial analysis, noting that archaeological site distributions in the boreal forest appear in concentrations that can be interpreted as collectively claimed multifunctional activity areas that are indicative of the institutionalised use of outlands. They suggested that the organisation of land-use was established sometime in the first half of the 1st millennium and, moreover, seems to have been related to a process of social change affecting Scandinavia at the time. Furthermore, the use of the outlands during the early and the Middle Iron Age (*c.* AD 1–650) was not simply a matter of subsistence, rather the land-use could be connected to crafts and trade that were linked with external markets. Signs of social and economic stress can be noted around AD 900–1000, which was followed by land-use regimes more prone to iron smelting and livestock herding (Lindholm et al. 2013, 36 fig. 20). Contemporaneously with this process, Sámi speaking people in the northern parts of Scandinavia underwent a gradual transition from hunting and fishing to reindeer pastoralism (e.g. Storli 1993; Aronsson 1994; Bergman et al. 2013; Björklund 2013). Petré (1980), and later Lindholm/Ljungkvist (2016), tested the observed patterns using a detailed inventory of bear phalanges retrieved from Iron Age burials. The presump-

1 In 2023, the database will be published in Zenodo, a general-purpose Open Access repository developed under the European OpenAIRE program and operated by CERN.

tion behind their analysis was that since bear phalanges were mainly associated with burials in areas presumably without contemporaneous bear populations, they could be seen as significant for trade and interaction with hunting communities in the forested regions of Sweden. On the basis of an interregional analysis, resulting in a model of faunal exploitation between AD 300 and 1200, a clear increase in bear phalanges was noted between *c.* AD 400–650, along with a decreasing number of Viking Age bear finds. This trend can partly be related to a depletion of resources in the Scandinavian inland region, which resulted in communities becoming more dependent on iron production and shielings (Swedish: *Fäbod* sing., *Fäbodar* pl.), although these took place within the same land-use organisation (Lindholm/Ljungkvist 2016).

A series of additional studies have provided further information and enriched our understanding of the role of the Scandinavian inland in the development of interregional trade networks during the Iron Age. Ashby et al. (2015) have shown possible locations of reindeer hunting grounds in Norway. Some of the antlers from these hunting grounds ended up as parts of finished combs or as raw material on Danish trading sites from the early 8th century onwards. Improved statistical analyses of radiocarbon dates associated with mountain hunting and pitfall-hunting systems confirm that the hunting of terrestrial mammals in inland Scandinavia intensified from around the 4th century AD (Pilø et al. 2018; Hennius 2020a). Moreover, in the following centuries, this process was accompanied by the exploitation of marine mammals and the formation of extensive networks (Hennius et al. 2018). These processes are also contemporaneous with indications of inland agricultural expansion during the late Roman Iron Age, which extended along the main river valleys that connected the region with the Gulf of Bothnia in the east and the Atlantic in the west (Ramqvist 2001; 2007; Zachrisson 2010; Lindgren 2019; Hennius 2021). At several places in the boreal forest, palaeoecological studies suggest that settlements with permanent "field-and-meadow" or "inland-outland" systems were established from the middle part of the Iron Age, i.e. *c.* AD 200–650 (e.g. Svensson 1998; Emanuelsson 2001; Emanuelsson et al. 2003; Karlsson et al. 2010; Eriksson 2020; Dögg Eddudóttir et al. 2021). The Iron Age settlement expansion appears to have been mediated by an innovative set of developments consisting of livestock herding with shielings, small-scale cereal cultivation and diversified outland use, through which resources were transformed into commodities for trade and exchange (Lindholm et al. 2021). The overall process was based on diversified land management systems that spanned out over the landscape and which aimed at including upland and lowland regions and, by this, creating a more predictable environment for land management (Hatlestad et al. 2021).

The main drivers behind the changes during the Iron Age and the subsequent development of boreal land management systems remain partly unclear. A recent study on the medieval trade in Greenlandic walrus has conceptualised similar patterns, such as "ecological globalisation", a process by which the market for valuable natural resources results in the development of interdependencies between the resource-extracting communities and distant centres of consumption (Star et al. 2018; Barrett et al. 2020). Research undertaken in the boreal forests of central and northern Sweden, from which several studies are referenced above, suggests that ecological globalisation was already underway in the Scandinavian inland region during the Middle Iron Age (i.e. AD 300–650). This induced a process that, at a local level, can be conceptualised as "resource colonisation" or, in other words, the increased exploitation of a local landscape by institutionalised land management systems aimed at extracting valued products that were transformed into trade commodities (Lindholm/Ljungkvist 2016; Hennius 2020b). Similar to, for example, the medieval Atlantic fishing industry, the intensified extraction of boreal forest resources and the establishment of far-reaching exchange networks most likely involved interdependencies between forest communities and people living in the central agricultural areas (Lindholm et al. 2021). We consider bear phalanges deposited in burials as one of the most notable archaeological expressions of such interdependencies.

In the Viking Age, archaeological and palaeoecological observations suggest that the craft and trading systems of the forested inland region changed. The often very long and large systems of hunting-pits, primarily used for hunting elk and reindeer, must have been labour-intensive enterprises requiring large bodies of people and coordination – at least seasonally – in terms of construction, maintenance and use (Lindholm/Ljungkvist 2016). In the Viking Age they seem to have played a lesser role in several areas, although in the Middle Ages they became more actively used again (Hennius 2020a). Moreover, the reduced use of the pits coincides with growing indications of agriculture and more distinct shieling systems in the pollen diagrams, if compared with the earlier phase (Svensson 1998; Emanuelsson 2001; Emanuelsson et al. 2003; Karlsson et al. 2010; Dögg Eddudóttir et al. 2021; Larsson 2021).

Direct archaeological evidence for the Early Iron Age settlements still has to be retrieved from the inland region. We suggest that the distribution of pitfall systems can be considered as proxy data for areas with more intense exploitation of wild faunal resources, as well as larger groups of people cooperating within a permanent field-and-meadow land organisation in the boreal zone (Lindholm et al. 2013; Lindholm/Ljungkvist 2016; Hennius 2020a). Even if most animals found in burial contexts were not hunted using pitfall traps, we consider the features indicative of a socio-economic system that incorporated forest resources and hunting (Fig. 1).

Lindholm/Ljungkvist (2016, fig. 7) have noted additional processes that can be associated with the shift in the Viking Age, and the observed pattern is further strengthened by recent research. In the Roman Iron Age, tar was associated with farmsteads, but in the Viking Age, and perhaps earlier, it was moved into the actual resource areas, i.e. the forested outland where considerably larger volumes were produced at larger production sites (Hennius 2018). This, in turn, necessitated the reorganisation of labour involving entire communities, which also had to engage in long-term forest management to provide adequate fuel for the tar production sites (ibid.). A similar process appeared in Norway, where an expanded need for iron resulted in the establishment of more sophisticated and reusable furnaces in order to produce large quantities of iron bloom. This intensification was based on decentralised and farm-based iron production, and it was initiated long before the establishment of industrial blast furnaces (Rundberget 2013; Indrelid et al. 2015; Loftsgarden 2017).

Based on this background, a more detailed analysis of bear phalanx contexts might help in gaining a more specific date for the shift, and thereby help in acquiring a better understanding of the changing interdependencies of the Iron Age ecological globalisation. In our analysis, we will consider chronological trends, such as an increase in bear claws in burials, as a reflection of increased hunting. Reduced numbers could, on the other hand, be related to changes in fashion or in the burial ritual, but could also be seen as signs of overexploitation, especially if the trend does not coincide with signs of lessened pressure on outland/forest resources. The presumption of this paper is that claws mainly represent bear furs. A critique of this assumption is presented by Grimm (2013; cf. Jordahl et al., this volume), who shows that claws could also represent amulets. Therefore, it is important to raise a number of source critical issues particularly relating to the material from mainland Sweden, but also from Gotland and Öland, where the vast majority of the graves are cremation burials. In addition, almost all of the relatively few inhumation burials have usually been plundered, making it difficult to analyse how claws were distributed in the burial chambers – and thus making it difficult to assess whether furs were deposited in graves or not. One way to approach this topic is to register the number of claws from each burial and thereafter register the minimum number of paws from a burial. This has not been done in a consistent way for this study due to the very low number of intact and well-preserved inhumation burials. Among the cremation burials, we are faced with the problem that many finds are derived from older excavations. This means that the bone material has not been retrieved in a consistent way during excavation, e.g. the material has not been sieved, and in many cases the bone material has not been analysed by osteologists, meaning that it can be assumed that

claw fragments often remained undiscovered. Nonetheless, we know from Rösta in Ås and a few Gotlandic cases that inhumation burials can contain, for example, a few claws in a pouch or placed in a container by the head of the deceased (see Jordahl et al., this volume). There are also cases of cremation burials with more than 10 claws, representing probably at least two paws and therefore with a higher probability of a fur or parts of such. However, even if it is crucial to have insights into these source critical issues, it does not directly affect the main topic and results of this paper, since bears have to be hunted to get access to either amulets, furs or even canine teeth (for the latter see Magnell/Iregren 2010; cf. Magnell, this volume, on Frösö).

The Bear in the Grave database

The paper's main method is a renewed analysis of the BiG database, which is now primarily aimed at a chronological analysis with a higher temporal resolution. This analysis will enable the identification of notable changes between sub-phases of the main periods of the Iron Age. The analysis also includes additional animal species, such as lynx and birds of prey. Since the previous study, a number of new burials containing bear claws have been registered. With the new registrations, also including those presented by Jordahl et al. in this volume, the Swedish finds currently number 407, of which 147 come from the island of Gotland. Five finds come from another Baltic Sea island, Öland, and the remaining originate from the mainland (Fig. 1). In comparison with Lindholm/Ljungkvist (2016), based on 323 contexts, the current database represents an increase of about 26 %.

This increase does not change the geographical aspect of bear finds from burial contexts in any substantial way. Besides the huge concentration on Gotland, two other areas have significant concentrations of burials with bear phalanges. One is the Lake Mälaren region, constituted by the counties (Swedish: *landskap*) of Uppland, Södermanland, and Västmanland. In the third area, the Norrland/Bothnian counties of Medelpad and Ångermanland, the actual number of contexts is considerably lower, but if the actual population density and the few excavations undertaken in this region are taken into consideration, the number of contexts is high. The reasons behind the varying frequency of bear claws cannot be attributed to one single factor. There is a strong correlation between a large number of excavated graves and bear claw finds, particularly in the Mälaren region and on Gotland.

Another factor is varying burial practices between different periods and areas. Once again, Gotland in particular and, to some degree, the Mälaren region stand out with many well-preserved burial grounds containing substantial amounts of grave goods from more than one archaeological period. The burial practice itself does, however, show major differences between mainland Sweden and Gotland. As mentioned above, mainland Sweden is completely dominated by cremation burials while, on Gotland, there is a significantly higher number of inhumation burials, even though the cremation burial practice dominates in most periods. The limestone bedrock of Gotland also provides favourable preservation conditions for both human skeletons and bear claws in the inhumation burials. Some regions, such as the island of Öland, are archaeologically very rich, with many excavated graves but with surprisingly few bear claw finds. One reason might be the number of Migration to Viking period burials that are not so well represented as those from earlier periods. For example, if there was a strong Migration period increase in bear claws on Öland, it cannot be observed in the present burial record. In south Scandinavia in general, a considerably lesser number of graves has been excavated and, in comparison with Middle Sweden and Gotland, there is also a clear trend toward more sparse grave goods from the Migration period and onwards into the Viking Age. The sparse number of bear claws in these areas are not direct evidence of reduced imports, but rather a sign of different burial and deposition patterns.

One basic source-critical issue, closely related to hunting pressure and the export of products from bears and other large mammals, is the extent to which the archaeological finds represent a local resource or imports from other regions. This question is related to the size of the bear population in Scandinavia during the Iron Age. The factual situation is uncertain, but for sure bears have never lived on the large Baltic islands. In the agricultural regions of south Scandinavia, they have probably been extinct for a very long time (see below, and also Magnell, this volume, on bears and humans in Sweden). The situation is more complex further north. For example, the medieval law texts do mention bears in, for example, the landscapes of Uppland and Östergötland, but whether their presence was sporadic or well established is uncertain (see summaries in Karlsson 2016, 64–66). Surely, it is possible that local bear populations existed in forested areas on the fringes of the settlements in the densely inhabited areas. On the other hand, an argument against this notion is the general absence of predators, including wolf and bear, as well as bones from their natural prey (Lindholm/Ljungkvist 2016, 9). In addition, hunting for bears, as well as wolves and foxes, tends to have been free in the Middle Ages since they were all seen as a threat to livestock (Karlsson 2016, 65, 66). Settlement layers in agrarian or urban settlement contexts in Middle Sweden contain no, or very few, bones from large wild mammals (Lindholm/Ljungkvist 2016). Animals such as elk, roe deer or red deer are very rare in the archaeological records, which means that regionally low or very low populations of these animals can be reasonably assumed. They can be seen as a proxy for bear and lynx populations, based on the notion that populations of larger mammals live side-by-side, no matter if they are grazers or predators. Consequently, we consider the vast majority of bear claw finds as imported, either from the boreal regions of Scandinavia or from areas beyond the eastern and southern shores of the Baltic Sea.

Of BiG's current 407 burials with bear claws, 248 graves have been dated to a specific archaeological period (Table 1). Some graves are, for various reasons, difficult to date to a specific phase within the time period, primarily due to poor preservation conditions and disturbed grave contents because of plundering or damage. Vague datings are also to some degree related to whether the graves belong to a transition phase or if they lack sufficient chronological data. Despite these source-critical points, the trends of the statistics are still so clear that these uncertainties do not affect the general basis for the analysis. As already noted, the number of dated graves represents a 26 % increase in comparison with the previous study (Lindholm/Ljungkvist 2016, 12 table 2). In comparison with this, the increase has not changed the overall statistical outlook of tendencies in the record significantly, except for the increased number of finds related to graves dated to the Roman Iron Age, primarily on Gotland, which see a more than double increase from eight to 18 burials. Only a few Roman Iron Age burials contain bear claws, although their geographical distribution shows that they are clearly associated with areas outside the natural distribution area for bears, which is particularly apparent through the concentration associated with the island of Gotland (see Jordahl et al., this volume). In the Migration period, the numbers increase dramatically, while they become considerably lower during the Vendel and Viking periods (see Table 1).

In the previous study, it was mentioned but not further elaborated upon that a significant change in the frequency of graves with bear claws took place in the Vendel period (Lindholm/Ljungkvist 2016). In this study, a larger number of graves were dated to specific phases of the Vendel period, based on a method for find combinations that originally developed for the Valsgärde burial ground (Table 2). This is founded on a detailed chronology, based on studies by other authors. A total of 62 more precisely dated Vendel period burials are presented in Table 3. Statistically, this is not a significant number of graves. But the strong contrast between the two halves of the Vendel period is still apparent and noteworthy, and the shift reveals a dramatic drop in the number of bear claw burials after the mid-7th century.

In order to test if this shift could be observed in the appearance of other exclusive animals, a compilation of burial records of lynx claws and birds of prey were added to the BiG database in order to serve as a comparison (Table 4a; b). The total number of finds from these animals is significantly lower but, nonetheless, clear patterns can be observed. For lynx, the drop seems to be more or less similar to what we see among the bear claws. For the birds of prey, the pattern is not as dramatic, even if a clear change can be seen. Something that especially shows up in the frequency of the birds of prey is that the most exclusive birds, i.e. peregrine falcons, are almost completely absent in burials after *c.* AD 700. They appear in eight to nine burials in phase VET 1 to VET 2–3, but only in one burial in the interval VET 4 to VIT 4.

A decline and its causes

It is difficult to divide the Migration period records into chronological phases in the same way as the Vendel period. Still, the overall pattern reveals a major change in the burial deposition pattern of exclusive animals around or slightly after AD 650, and it seems necessary to discuss possible reasons behind the change. To begin with, it may be relevant to first inquire into how widespread the custom of depositing bear remains was at its peak. Therefore, in order to enable this discussion, the renewed analysis of the BiG database has included a sex determination of the burials, primarily based on find combinations. This has been done because the osteological data from cremation burials are more fragmentary and more affected by source-critical uncertainties. Discussions concerning gender are usually related to the analysis of gendered social relations, but, in this case, we suggest that gender associations and related frequencies of animal remains can also be used for insights into how common bear furs were in societies. Further, such an analysis can help to identify the impact of hunting on bear populations. From a general perspective, without considering potential regional differences in Sweden, it is possible to conclude that bear claws are more frequent in male burials. However, as Petré (1980) has already noted, the proportion of females is also high and the occurrence of bear claws cannot be seen as a strictly gender-related attribute (Table 5). This pattern is in clear contrast to lynx claws, which seem to be almost entirely associated with women (see Zachrisson/Krzewińska 2019).

Hence, bear remains seem to be equally related to both male and female burials. In certain families, particularly high-status families of the community, it is possible that at least two members possessed bear-related items, whether it was furs or not (see Jordahl et al., this volume; Grimm, this volume). The relative distribution of bear-related items between female and male burials is in itself a delicate topic. The gender relation of bear finds/claws is probably a matter of regional patterns. Without presenting numbers, it seems that bear remains are more common in female burials on Gotland. However, in the Lake Mälaren region they are, for example, in a minority on Helgö. Of 20 burials with bear claws, only one is considered a more or less certain female burial, and five are uncertain or double burials. But on the Lunda and Viken burial sites on the adjacent island of Lovön three out of six burials that contain bear claws are female. In addition, based on find combinations, it seems that bear furs were associated with burials at more than one level of the society, to such extent that they can be considered a "middle-class phenomenon" between *c.* AD 400 and 650. Moreover, at the Barshalder burial ground on Gotland (which has been osteologically examined in detail) 13 % of the graves, both male and female, contained bear claws (Rundkvist 2003). It is far from certain whether Barshalder is representative of other sites on Gotland, but the number of finds from the island suggests it is not unique. From Broa in Halla, an excavation of 120 burials without a detailed bone analysis has generated at least 12 with bear claws (Langhammar 2012; Statens Historiska Museum [SHM] bone database Inv. No. 35335). If these burial grounds are representative of average grave fields on

Gotland, it must mean that an extraordinary number of furs and other bear-related items with claws circulated in this period. For the time around AD 500, it has been estimated that the number of farms on Gotland was almost 2,000 (Svedjemo 2014).

If this reasoning can be considered a valid reflection of hunting pressure during the time period, it raises concerns as to what extent the bear populations became affected by hunting. Moreover, the extent to which the decrease in the middle part of the Vendel period should be understood as related to changed exchange routes, the alteration of the burial rituals, or the scarcity of these animals/products, together with increased prices, can be questioned. Possible reasons may of course intersect; for example, a change in a funeral ritual can be the result of economic factors, such as the reduced ability of community members to deposit items that have suddenly become scarce. The scarcity in turn could have been caused by increased distances to trade routes, as well as a general scarcity of bears due to overexploitation.

Recent findings in genetics can help with some insights into the issue (Xenikoudakis et al. 2015). The brown bears on the Scandinavian peninsula can be separated into two larger groups based on distinctive lineages (or clades) characterised by their mitochondrial DNA haplotypes. These clades reflect the Scandinavian bears' phylogeography, which is shaped by faunal history and the colonisation of the area from the south and northeast after the last glaciation (Taberlet et al. 1995; Bray et al. 2013). A contact zone in a distinct latitudinal division has been identified in the central Scandinavian peninsula, in the regions of northern Trøndelag in Norway and northern Jämtland in Sweden (Fig. 1). Since it is exclusively females who pass on mtDNA, the division is reflective of the maternal inheritance and female bears. Modelling of the genetic substructure and variation by computational statistics, also using more genetic data, implies a demographic bottleneck and a general decline in effective population size in both the southern and northern parts of the Scandinavian brown bear population, as well as in the contact zone (see also Kopatz, this volume). The loss in genetic diversity and the current genetic structure may, however, have been caused by long term historical-ecological processes preceding the major decline in bear population size caused by intense hunting approximately 100 years ago. Hence, the structure of the bear population seems to have an ancient origin that has remained largely unaffected over the last centuries. The timing for this process remains to be outlined (Xenikoudakis et al. 2015). Still, the genome of current bear populations has a strong relationship to hunting pressure and habitation loss due to human expansion. The question is, when did these changes in the genome take place? We would suggest that the chronology of the burial record with associated bear remains might present a temporal reflection of this process.

Moreover, in order to understand the shift in the Vendel period, it could be useful to compare the frequencies of various animal remains associated with the different phases of the Viking Age. It is clear that there are fewer claws of bear and lynx, and the diversity of birds of prey is consistently lower from the 7th to the 10th century in comparison with the phase of *c.* AD 560–650. To illustrate this process we can look at Helgö, which served as a considerably earlier economic centre from at least the Migration period. During its later stages, Helgö's role as a production site seems to have diminished, but it was still a place with considerable wealth well into the Viking Age. Here, there are bear claws recorded from 22 out of a total of 123 Migration to Viking Age burials containing analysed bones. This is 18 % of the total (Melin/Sigvallius 2001, 123–132). A total of 16 originate from the Migration or Vendel periods. At Birka, which was a later economic centre from *c.* AD 750–980, the number of bear claws is considerably lower, with currently only six out of more than 1,000 excavated graves registered. This is noteworthy since this town served as a hub for the importation of furs and antlers. Birka seems to follow the broader trend of the Viking Age, with a low number of bears and birds of prey finds, and a virtual absence of lynx claws (Lindholm/Ljungkvist 2016, 13). Nevertheless, an increase in bear claws in burials can be seen in the late 9th and early to mid-10th century (VIT 3–4), but the levels are far from those of the AD 400–650 interval. Interestingly, the pattern

observed at Birka has parallels with the one observed for the Baltic island of Åland, and one can ask if it coincides with a markedly higher level of eastern and oriental influences on the material culture in eastern Sweden (see Gustavsson/Ljungkvist, this volume).

In addition, some other differences can be noted by comparing burials from the 7th century with those of the 9th century. During an earlier stage, *c.* 560–750, the burials contained more animal remains, and particularly the monumental burial mounds were on average larger. The 8th century is a transition period, in which domestic animals in the burials and the amount of labour on the actual grave monuments seem to decrease. This is clearly visible in the monumental burials, but similar changes have also been observed at large cremation burial grounds (Bratt 2008; Magnell et al. 2017, 222). A trend that can be clearly observed among the elite boat burials is a decrease in certain prestigious objects. Some of the Vendel period burials from *c.* 560–700 contain up to four swords, two long swords and skramasaxes, respectively, and, furthermore, up to three shields. In comparison, Viking Age burials normally contain only one sword and one shield (see Stolpe/Arne 1912; Lundström 1980; Schönbäck/Thunmark-Nylén 2002). These changes correlate with the decreased frequency of birds of prey in the burials (see Tables 3–4). The differences in the frequencies of bear remains between the regions of present-day Sweden also seem to appear at this time, which other chapters in this volume clearly help to demonstrate (see Gustavsson/Ljungkvist, this volume; Jordahl et al., this volume).

Discussion

In the final section of the paper, we want to discuss the implications of the renewed analysis of the BiG database by investigating other areas. To begin with, settlement studies in the Lake Mälaren region, i.e. the large and densely populated basin in southeastern Sweden, which borders the boreal forest, suggest that the settlement concentration was almost as large in the Roman Iron Age as in the Viking Age (Göthberg 2000, 208). This in turn suggests a several-century-long continuity of heavy landscape utilisation that would have created a general lack of valuable animal resources in the nearest area. For southern Sweden, it is possible to follow a process of increased utilisation of large mammal resources over a long time span. This continuity probably goes back to the Bronze Age or even to the Neolithic, when high hunting pressure in, for example, Denmark and southernmost Sweden had already led to a sharp decrease in, and even an extinction of, large mammals such as bear, lynx, and elk in the Mesolithic (Aaris-Sørensen 2009; Magnell, this volume, on bears and humans in Sweden). Due to a weaker burial record in southern Scandinavia (see above), it is more difficult to estimate how high the demand was for bears, their claws, fur and teeth in this area. However, we do know that some demand existed as there is evidence for a bear being imported to the royal court in Lejre, Denmark, as well as finds of claws and canine teeth from Haithabu culture layers and claws from the sequence of halls in Uppåkra (Christensen 2015, 168–169; Schietzel 2018, 304; cf. Magnell, this volume, on Frösö church). It is yet not possible to define how many of these bear remains originated from northern Scandinavia or eastern Europe, respectively, although we suspect that the majority of these south Scandinavian finds originate from present-day Finland, Poland, the Baltic states, and regions further east. This relates to the view of Iregren (1988) and the conclusion of this paper that the few finds of bears in south Scandinavia reflect trading networks positioned to large degree in central Sweden and on Gotland.

Nevertheless, from the Roman Iron Age, it is possible to identify a broad demand for antlers, primarily used for manufacturing combs, and furs or other objects with attached claws of bears and lynx in the central agricultural regions of Scandinavia. We suggest that this fashion required the inhabitants of these regions to import either finished products or the raw material from areas that still

maintained viable animal populations, i.e. the forested region of inland Scandinavia or the eastern parts of Europe. This demand increased dramatically in the Migration period – possibly a result of intensified trade networks – when a very high number of bear claws, and to some degree lynx claws, appeared within a rather broad social spectrum of the society, at least on Gotland and in the Lake Mälaren region. This trend goes hand in hand with increased numbers of composite antler combs in the burials, which eventually became one of the most common finds in Iron Age burials, which in turn reflects a strong demand for forest products in Iron Age society. For example, at the Lunda 27 burial site, located just west of Stockholm, 72 % of the 155 burials that date to between the Migration and the Early Viking periods contained antler combs (Petré 1984, 70). Thus, when we reach the 6th century, a high percentage of the population seems to have owned at least one item produced from resources that had their origins in the forested regions, and these patterns stayed the same throughout the Viking Age. In the late 6th-century burial record a new, expensive sport, falconry, appears in the shape of buried birds of prey (Vretemark 2013, table 1). So far, 44 graves containing raptors have been registered in the BiG database. Goshawk and eagle owl are the dominant species, but the more exclusive birds such as peregrine falcons appear in eight of the records. The appearance of birds of prey in burials coincides to some degree with a massive importation of whalebone gaming pieces, most likely originating from arctic Norway (Hennius et al. 2018; Ljungkvist/Hennius 2020). In comparison with other phases, particularly with the phase AD 560–650, this is a period of considerably higher investments and effort in the burial goods, the number of sacrificed animals, and the size of the burial monuments (see for example Ljungkvist 2006; Bratt 2008). Antler combs, bear and lynx claws, and birds of prey are all separate indications of outland exploitation that seems to increase considerably at this time. The question is whether this fashion was ultimately sustainable.

In order to discuss the question of sustainable hunting, it might be illustrative to use an analogy with early modern to more recent cases where top predators and large mammal populations, birds and fishes have reached tipping points, i.e. the population has not been able to sustain a high demand and hunting pressure. In such cases, the valued animal populations have become associated with a strong relation to market value, since diminishing numbers resulted in increasingly higher prices of the animal products and a potentially more exclusive status of the product for those who lived outside the exploitation areas. Such a relationship has, for example, been recorded in the cod and bluefin tuna industries during the last century (Ainsworth/U'Sumalia 2011; Rodrigues et al. 2021). Almost all stocks of these species dropped dramatically during and after the 1980s. This resulted in considerably higher prices for the consumers but did not immediately lead to sufficiently managed stocks. Today, the situation for bluefin tuna is more stable, while many or most Atlantic cod stocks remain in a disastrous state. The primary illustration of how certain animal products could be valued in medieval times, and probably earlier, were the high prices paid for Norwegian falcons in England and the far greater amounts paid in the eastern Mediterranean (Andersen 2019, 50; Chiesa 2021, 10). So, the dramatic decline in bear claws, lynx, and peregrine falcons in burials in the late 7th century can be considered as a sign of something happening with the animal populations, and/or their availability. If a globally expanding market resulted in high demands and high hunting pressures on certain animals, it is perhaps not surprising if fewer exclusive birds and perhaps also bear furs ended up in Scandinavian graves during the Viking Age.

Here, we would also like to follow another line of argumentation for understanding the shift. There are indications that the interaction between eastern Sweden and the regions on the opposite side of the Baltic increased about 50 years after the decline in the mid-7th century. These contacts are particularly visible through the AIII-pottery, particularly from Finland and Estonia (Callmer 2017). Additionally, more conflict-related evidence comes from the Saaremaa boat graves in Estonia, indicating a Middle Swedish military presence outside their homelands (Peets et al. 2011; 2013; Price et al. 2016). An early example of increasing Gotlandic interest in the Baltic region during this

period (and probably earlier) can be found in Grobina in Latvia (Nerman 1958). As Callmer, among others, has stated, the largest Scandinavian motivation for the trade in the east was fur products (Callmer 2017). The Scandinavians were likely aware of these eastern resources before the Viking Age, since there had been long-lasting contacts over the Baltic, but still, evidence from the material culture suggests these contacts increased in the early 8th century. In the 9th century, a strong Scandinavian presence built up along Russian river and lake systems, from the Ladoga-Ilmen-Peipus triangle to Kiev, and their activities stretched into the Black Sea. Further, there are increased interactions between Scandinavians and communities in the southern Baltic, which in turn connected with other large forest areas of the boreal region (see, for example, Callmer 2017).

The causes of the Viking phenomenon have been discussed on numerous occasions, and there is probably not just a single one, not least since the mobility and expansion of the Scandinavians and their interaction with people from other regions had so many different expressions (see for example Ashby 2015; Barrett 2015). A shortage of bear fur is not in itself an explanation for the major changes in Scandinavia, but still, the bear claws are among the most substantial pieces of evidence we have of resource exploitation that could have reached unsustainable levels, at least in Scandinavia. Walrus hunting is another example. Recent research in the North Atlantic has shown how Scandinavians could kill off large mammal populations within relatively short periods during the late Viking to Middle Ages, and, furthermore, how the hunters expanded and made use of new killing grounds as soon as the previous ones had been depleted (Star et al. 2020). Such processes of "resource colonisation", by which the quest for valuable natural resources resulted in intensive exploitation and production landscapes (Lindholm et al. 2021), constituted a process that has recently been conceptualised as ecological globalisation, creating interdependencies between animal populations, the resource-extracting communities and distant centres of consumption (Barrett et al. 2020). The bears, lynx, and raptors were probably not primarily important as animal trading resources, but perhaps they can, as the walrus, serve as proxies for intense resource use and coupled relations between animal population dynamics and human mobility. Either people moved to find new hunting grounds for valued resources or they tried to control the trade and trade routes in other regions – an important drive for the expansion of Scandinavians to other regions.

In conclusion, current research proposes a settlement expansion in the Middle Iron Age (*c.* AD 200–650). This seems to have been driven by diversified outland use through which resources from the boreal forest environments were transformed into commodities for trade and exchange, and arguably one significant trade item was bear furs and other bear-related items, such as claws and canine teeth, as is reflected in the burial records presented in this paper. In the Viking Age, on the other hand, the trading systems of the forested inland region seem to have changed without direct signs of decreased exploitation of the forests. Instead, it is possible to note increased indications of agriculture and more distinct shieling systems in pollen diagrams, as well as a regionally constituted intensification of pastoralism, as well as tar and iron production. We think this is related to the opening of new facets, or niches, in the multifunctional boreal environments gradually putting a larger focus on resources other – for both subsistence and trade – than wild animals. This paper proposes that one explanation for this shift was a depletion of animals such as the bear in the Scandinavian inland region, which is also manifested in the decreased frequencies of bear claws in the BiG database (Table 4). The increase in bear claws from the 10th century onwards shows that these were possibly, at least partially, from bears that came from forests in the east, which coincides with similar cases on the Baltic Åland islands (see Gustavsson/Ljungkvist, this volume). Our model is straightforward and carries several source-critical issues, but, at the same time, it could serve as a hypothesis for future interdisciplinary research committed to the boreal forests of Scandinavia and their contacts with the worlds outside.

Acknowledgements

John Ljungkvist's work on this paper was undertaken within the "The Viking Phenomenon" project at Uppsala University, funded by the Swedish Research Council (VR 2015-00466).

Karl-Johan Lindholm's work was undertaken within the project "Contesting marginality: The boreal forest of inland Scandinavia and the worlds outside, 1–1500 AD (UTMA)", supported by the Swedish Research Council (VR 2017-01483).

We would like to thank the editor of this volume, Oliver Grimm, for his immense support and patience. In addition, we want to acknowledge the reviewers and express our gratitude for their constructive comments.

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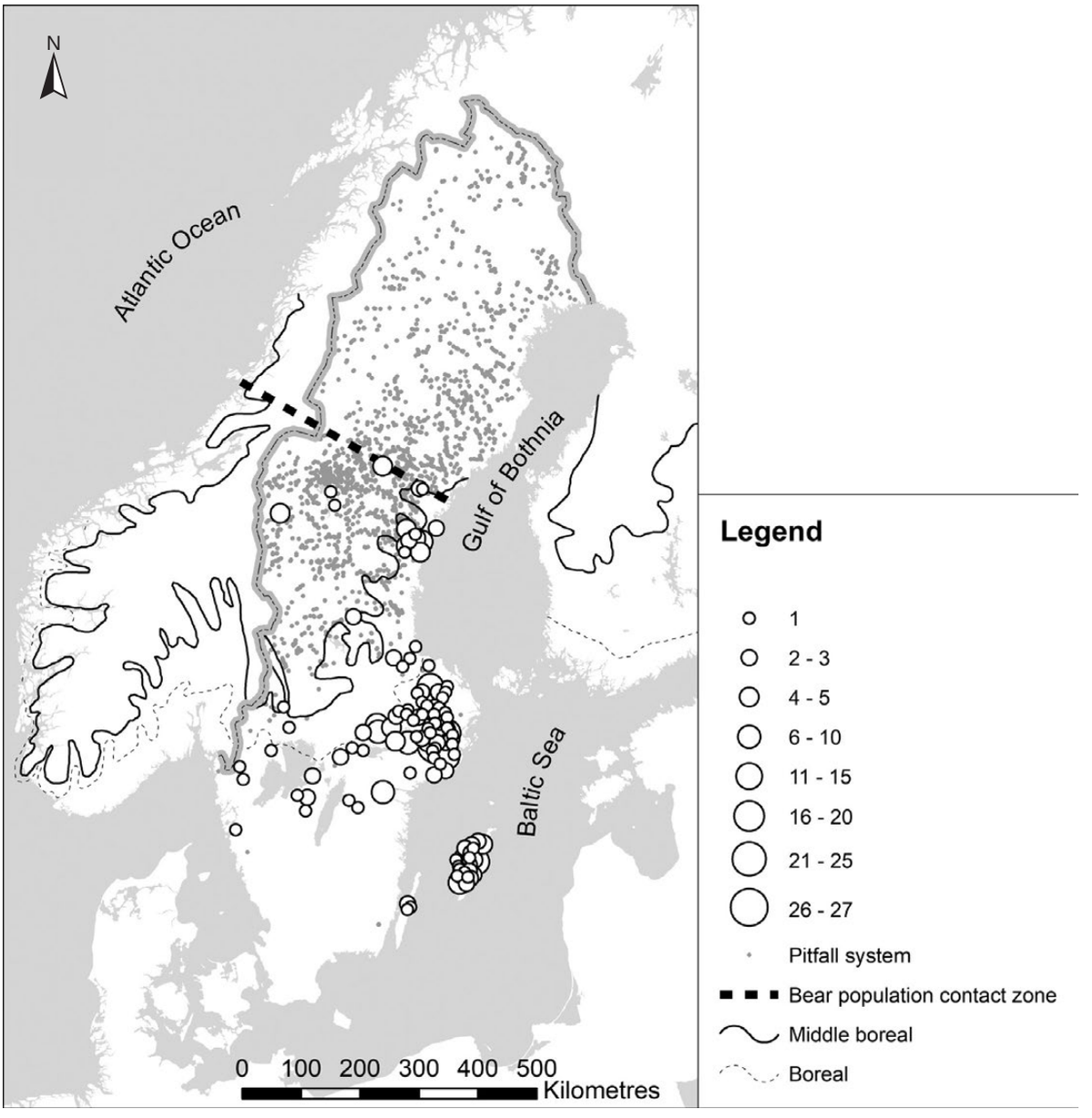


Fig. 1. Map of graves with bear finds and the distribution of pitfall hunting systems. The boundary between the southern and middle boreal zones is indicated on the map, as well as the contact zone between the southern and northern bear population (map K. J. Lindholm).

Table 1. Number of graves with bear claws from the main Iron Age periods in Sweden. Upper row shows the graves from the database with allocation to a specific time period. Contexts that cut through more than one phase due to uncertain dating circumstances are excluded. Lower row reveals the number of graves per year according to estimated length of the period. PRIA (Pre-Roman Iron Age), 400 years (400–1 BC); RIA (Roman Iron Age), 400 years (AD 1–400); MP (Migration Period), 160 years (AD 400–560); VET (Vendel Period), 215 years (AD 560–775); VIT (Viking Age), 275 years (AD 775–1050).

	PRIA	RIA	MP	VET	VIT
Find per phase	3	18	101	76	50
Find per year of phase	0.008	0.045	0.63	0.35	0.18

Table 2. A model of late Iron Age phases in present-day Sweden, based on different overlapping Scandinavian chronological studies (modified after Ljungkvist 2008).

Phase	Years	Key reference
VET 1	560/70–620/30	Petré 1984 (bead horizon P3); Jørgensen/Nørgård Jørgensen 1997 (1B1–1B2)
VET 2	620/30–660/70	Petré 1984 (bead horizon P4); Jørgensen/Nørgård Jørgensen 1997 (1C–1D2)
VET 3	660/700–710	Jørgensen/Nørgård Jørgensen 1997 (1D2); Petré 1984 (P4 late)
VET 4	710–760/70	Feveile/Jensen 2000 (Phase B–C); Jørgensen/Nørgård Jørgensen 1997 (1D2–2A); Petré 1984 (bead horizon P5); Callmer 1997 (Pl. 15A)
VIT 1	760/70–800	Feveile/Jensen 2000 (Phase D–F); Callmer 1997 (Pl. 16A); Skibsted Klæsøe 1999 (per. 1)
VIT 2	800–850	Feveile/Jensen 2000 (Phase G–H); Callmer 1997 (Pl. 16B–C); Skibsted Klæsøe 1999 (per. 1–2a1)
VIT 3	850–900	Callmer 1997 (Pl. 17A); Skibsted Klæsøe 1999 (per. 2a1–2a2)
VIT 4	900–950	Callmer 1997 (Pl. 17B); Skibsted Klæsøe 1999 (per. 2a1–2b).
VIT 5	950–1000	Callmer 1997 (Pl. 18A–B)
VIT 6	1000–1050	Callmer 1997 (Pl. 18C)

Table 3. Graves with bear claws dated to a specific phase of the Vendel period and divided into three blocks of the main period: early phase, transition phase, later phase.

	VET 1	VET 1–2	VET 2	VET 2–3	VET 3	VET 3–4	VET 4
Finds per phase	23	19	10	6	1	2	1
Numbers in larger phases			Early phase: 52 graves	Transition phase: 6 graves			Late phase: 4 graves

Table 4a. Graves containing bear, bird of prey, and lynx remains from the Vendel period, dated to a specific phase.

Phase	VET 1	VET 1–2	VET 2	VET 2–3	VET 3	VET 3–4	VET 4	VET 4–VIT 1
Bear claw	23	19	10	6	1	2	1	2
Lynx claw	6	4	2	4			1	1
Birds of prey	8	13	7	9	1	4	3	3

Table 4b. Visual representation of Table 4a.

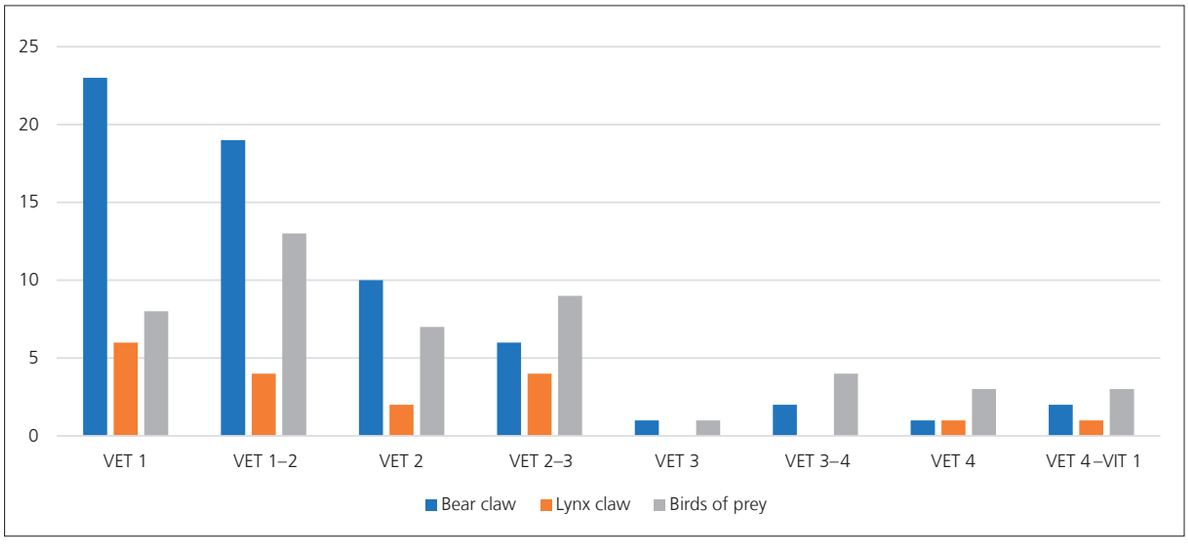
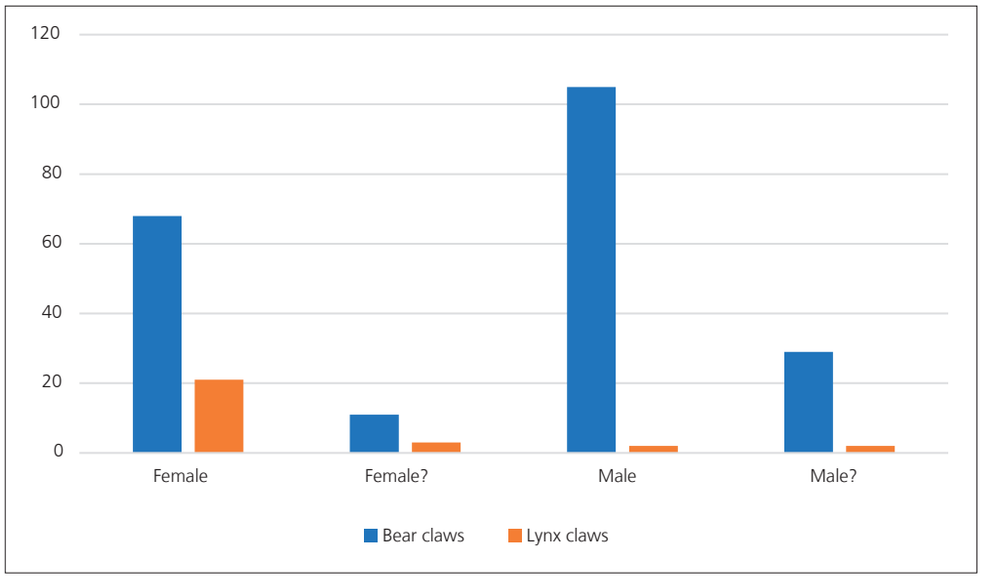


Table 5. Frequency of bear and lynx claws in graves with female and male attributes, respectively.



Bear and Human

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Advanced Studies on the Archaeology and History of Hunting, edited by the Centre for Baltic and Scandinavian Archaeology (ZBSA), Volume 3

Bear and Human

Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe

Edited by Oliver Grimm,
in cooperation with Daniel Groß, Alexandra Pesch, Olof Sundqvist, and Andreas Zedrosser

A volume based on papers presented at a conference at Orsa Predator Park, Dalarna, Sweden, Oct. 16th to 18th, 2019

Volume 3.2

BREPOLS

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library.

Copy editor: Gundula Lidke

Layout, typesetting, and image editing: Matthias Bolte and Cornelia Lux-Kannenberg. Cover design by TopicA.

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D/2023/0095/164
ISBN: 978-2-503-60611-8 (3 vols)
e-ISBN: 978-2-503-60613-2 (3 vols)
Volume DOI: 10.1484.M.TANE-EB.5.134320
Three-volume set : DOI: 10.1484/M.TANE-EB.5.133678

Printed in the EU on acid-free paper.

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By Hannah Strehlau

Keywords: Late Iron Age, Sweden, bear claws, faunal remains, burial tradition, aristocracy

*Abstract: This chapter deals with the faunal remains of the brown bear (*Ursus arctos*) in burials in relation to other faunal remains. In a study of 83 analysed contexts, bear claws appear in much fewer burials than the remains of other animal species. Specifically, domestic animal remains are deposited at a much higher rate than those of wild animals, including brown bears. In total, four graves contained bear claws, and these burials are presented as comparative case studies. Despite striking differences in the burial type and the equipment of the graves, all case studies are located at three boat-grave cemeteries (Valsgärde, Gamla Uppsala, Tuna in Alsike), which connects them to Vendel Period and Viking Age aristocracies.*

Introduction

During the Vendel Period (560/70–750 CE) and Viking Age (750–1050 CE)[1] in mid-eastern Sweden, graves of women, men, and children often contained an abundance of faunal remains. These bones mostly belonged to the remains of feasting, food gifts, and sacrifices, the latter of which deposited as both complete and incomplete animals. In a few cases, however, the remains do not fit into any of these categories.

Bear claws in prehistoric graves are commonly interpreted as being the only preserved remains of a bear fur (e.g. Petré 1980; Sigvallius 1994, 76), which is supported by recent studies on organically preserved bear hairs from archaeological contexts and skinning practices (Kirkinen 2017).[2] Similar explanations are suggested for the occurrence of phalanges from other fur-bearing animals, such as cat, lynx, squirrel, or marten (Petré 1980; Lindholm/Ljungkvist 2016; Zachrisson/Krzewińska 2019). Even selective depositions of cranial parts, extremities, and vertebrae of horses and cattle

1 This study uses the chronological periods suggested for mid-eastern Sweden by Ljungkvist (2008). He divides the Vendel Period into four periods (Vet 1–4, after Swedish *Vendeltid*) and the Viking Age into six periods (Vit 1–6, after Swedish *Vikingatid*). For further reading on the chronology see also Arrhenius 1983, fig. 6; Nørgård Jørgensen 1999, and Ljungkvist 2015 in particular for the end of the Viking Age in Uppland.

2 Further interpretations of bear claws in graves include: luxury or prestige goods, hunting trophies, magical or cultic objects that are tied to religious or ritual practice (e.g. Iregren 1988, 303–304; Krüger 1988, 361–365; Schönfelder 1994; Wamers 2009).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 417–428 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134343

were interpreted as the remains of hides (Piggott 1962; Hagberg 1967, 59–60; Russell 2012, 109). Concerning bear claws, some inhumation graves showed, in fact, the undisturbed and original position of the claws, suggesting that the deceased human had been laid on or covered by a fur (e.g. Petré 1980, fig. 2). In addition, Lindholm/Ljungkvist (2016) mention that these bear claws are (almost) never processed, which excludes their use in perforated form as pendants or amulets.[3]

Besides the interpretation of such bear phalanges in prehistoric graves, recent projects focused on the question of how common this practice was, how it was distributed chronologically and geographically, and what impact big game hunting had on the population of the brown bear. In a study on the faunal exploitation of *Ursus arctos* during the Late Iron Age (500–1100 CE) in Sweden, Lindholm/Ljungkvist (2016) presented 323 contexts (including both graves and settlements) in which faunal remains of the Swedish brown bear occur. Earlier, Grimm (2013) had shown that there are approximately 500 known burials during the 1st millennium CE in northern and middle Europe with "bear related furnishings". Does this mean that faunal remains of *Ursus arctos* in graves represent a common phenomenon? Who was equipped with a bear fur in the burial? How can we interpret this type of deposition? This chapter highlights the prevalence of bear claws in relation to other faunal remains in burial contexts from the Late Iron Age.

Case studies

To find out whether the presence of bear remains in the funeral context is a common phenomenon, one has to consider their distribution in relation to the total numbers. Extensive statistical analyses on faunal assemblages in burials that cover a supra-regional area have not been carried out on a large scale for the Iron Age of northern Europe. In this case, small-scale research has been carried out on 83 graves in the province of Uppland in middle-eastern Sweden (Strehlau 2018; cf. Fig. 1).[4] Of the 83 graves, 46 were cremations and 37 were inhumations. These contexts were selected based solely on the quality of osteological reports and dating possibilities, resulting in a cross section from the Vendel Period and Viking Age societies in Uppland. The aim of the project was to find patterns among the deposition of animals in burial contexts and how they shifted in relation to the social status of the dead, the gender of the deceased, and other factors. Which species were present among the faunal remains, which body parts were deposited, in what condition were the bones, and, mainly concerning inhumations, where in the grave were they placed?

Only four graves (4.81 %) held osteological evidence of *Ursus arctos*, and only *phalanges 3*, i.e. the claws of the bear, were preserved as faunal remains (Fig. 2). In contrast, the majority of depositions included domestic animals (dogs, horses, cattle, pigs, sheep/goats, chickens, cats), which appeared in 72 out of 83 graves (86.74 %). Wild animals, on the other hand, showed up in only 21 out of 83 contexts (25.30 %) and only occurred together with domestic animals (Fig. 3). This group includes wild mammals, wild birds, and fish, but excludes geese and rodents.[5] When further excluding fish and all undetermined birds, the number shrinks to 16 graves (16.86 %). Furthermore, excluding 11 graves dating to the Late Viking Age that contain neither faunal remains nor grave goods from the total

3 Exceptions are known, for example, from a Viking Age grave in Rösta (Äs parish, Jämtland), where two single bear claws were found close to the human skeleton. They are interpreted as talismans that might have been placed in a little bag, which would have been attached to the clothes (Jordahl et al., this volume; Petré 1980; cf. Kjellmark 1905, 369).

4 The study and the case studies presented here are part of a Master's thesis in archaeology, defended in 2018 at Uppsala University (cf. Strehlau 2018).

5 Because of the uncertainty whether the geese in these contexts were domestic or wild and the uncertainty whether certain rodents were intentional depositions or ended up in the graves accidentally.

count,[6] the numbers become clearer – in this case domestic animals appeared in 71 out of 72 graves (98.61 %) and wild animals in 21 out of 72 contexts (29.16 %).

Since bears rarely appear in graves compared to domestic animals, we need to consider how remains of wild animals relate to each other. It appears that with an MNI[7] of one each, lynx (*Lynx lynx*), red deer (*Cervus elaphus*), and wild boar (*Sus scrofa*) are the rarest species in the study.[8] All these animals are represented by a few burnt fragments of hooves/lower limbs, and only claws in case of the lynx. Two possible squirrels (*Sciurus vulgaris*) are part of the material, both associated with the biological order Rodentia and mentioned as uncertain in the osteological report.[9] In both graves, these were found as burnt bones in the cremation layer, which suggests their intentional burning as part of the burial ritual. Unlike mice, which were identified among the rodents, squirrels are known as fur-bearing animals. While the depositions of bear claws led to various different interpretations (cf. e.g. Petré 1980; Iregren 1988, 303–304; Krüger 1988, 361–365; Schönfelder 1994; Wamers 2009), the claws of squirrel, marten, lynx, and, in a few cases, cat, need to be considered in the context of the fur trade during that time. However, both potential squirrels were not represented by claws; one is represented by a fragment of *talus 1,* which is a foot bone (Ultuna 4425), and the other by a few fragments of the lower hind extremities (Ultuna 4060).

In contrast to the low number of wild mammals, there is a total of 20 wild birds (MNI) – hunting birds and their prey as well as decoys. Identified species are goshawk (*Accipiter gentilis*), sparrow-hawk (*Accipiter nisus*), eagle-owl (*Bubo bubo*), snowy owl (*Bubo scandiacus*), peregrine falcon (*Falco peregrinus*), merlin (*Falco columbarius*), capercaillie (*Tetrao urogallus*), black grouse (*Lyrurus tetrix*), hazel grouse (*Tetrastes bonasia*), crane (*Grus grus*), and duck (*Anatidae*).[10] Including geese as potential wild birds, the MNI would be 31. Then again, this number is confusing since these animals originate from only six graves (corresponding to 7.22 %), all of which are high-status burials that contain an abundance of both wild and domestic species' remains. Thus, the occurrence of wild birds in graves is, in fact, not much higher than that of bears.[11] These interrelations show that faunal remains from domestic animals are much more common in Upplandic graves than faunal remains from wild animals. Except for wild birds, brown bear remains appear more often than other wild animals in these burial contexts, but are still underrepresented compared to domestic animals.

In the following, we take a closer look at the four bear-related contexts. If the faunal remains of *Ursus arctos* do not occur as frequently as other animal-related depositions, do these graves have anything in common? Were there only certain people buried with bear furs?

The four case studies containing bear claws are two cremation and two inhumation graves. The sites in question are Valsgärde, Gamla Uppsala, and Tuna in Alsike, which are well-known burial sites situated in close vicinity to today's city of Uppsala. These cemeteries, which contain a number of burials with elaborate grave constructions as well as rich grave furnishings, are all part of the Vendel Period and Viking Age upper class boat-grave tradition.

6 Due to the absence of animal depositions and grave goods, such graves from the Late Viking Age can be interpreted as early Christian and thus express a different burial tradition.

7 The Minimum Number of Individuals (MNI) constitutes the least number of individuals of a certain species that occurs in one context. It is a purely anatomical count, in which the appearance of the same bone several times indicates the number of individuals. This number is a minimum, since it cannot be excluded that two different bones that only appear once in the context might actually originate from two different individuals. The absolute number of individuals might only be determined by genetic analyses.

8 Graves 7 and 110 from Odenslunda (cf. Sigvallius 2005), and grave 729 from Inhåleskullen (cf. Ohlsson 2012).

9 Graves 4425 and 4060 from Ultuna (cf. Sjöling/Bäckström 2014).

10 Ducks are here listed among wild animals, but it cannot be ruled out that domesticated ducks are among them.

11 Both wild and domestic birds are probably underrepresented regarding species determination in comparison to bear claws, due to high fragmentation in cremation burials and a lack of sieving, especially on early excavations. A similar source-critical problem exists with the preservation and determination of fish remains.

Grave 65 in Valsgärde is an urn grave with a cremation layer, dating to Vet 2–3 (620/30–700/710 CE) and containing the remains of two human individuals (Ljungkvist 2008). Osteological analyses revealed that the bones belong to a male adult and to a younger, probably juvenile, individual whose sex could not be determined (Bäckström 2001, 9–10). The identification of at least one male individual is supported by the archaeological material: an iron strap mount, a fire steel, a strike-a-light flint, a comb, and melted glass. The osteological report further shows that an MNI of at least five individual animals is present in the grave: one sheep/goat (*Ovis aries/Capra hircus*), one chicken (*Galliformes*), one dog (*Canis familiaris*), one pike (*Esox lucius*), and bear claws (n = 5, *Ursus arctos*; ibid., 10–13). In addition, unburnt long bones (fleshy parts) of an undetermined mammal indicate the presence of a sixth animal species. Except for the bear, pike, and the undetermined mammal, the other animals were deposited as complete carcasses in the grave, and all of them were burnt (ibid.).[12] Due to the relatively sparse grave furnishing, it cannot be classified as a high-status burial. Nevertheless, the damaged status of this context leaves the possibility that the original grave furnishing was somewhat different.

The other cremation from Valsgärde is grave 82, dating to Vet 1 (560/70–620/30 CE), which makes it slightly older than grave 65 (Ljungkvist 2008). This context is a non-concentrated thin find layer, which was found undisturbed. As in the case of grave 65, it contained the remains of an adult. The burial is stratigraphically related to a ship setting, but it is not certain whether burial and ship are related. The bones from this grave have, so far, only been briefly examined by Niels-Gustaf Gejvall,[13] who identified the bones of a human, preliminarily recognised as female,[14] as well as bones from a horse, dogs, sheep, and poultry. However, the grave inventory, consisting of a probable copper-alloy sword sheath mount, a spear rivet, a comb, and a strike-a-light flint, suggests that the deceased was a male. Furthermore, an assembly of iron rivets and nails indicate a metal-bound wooden vessel (Ljungkvist et al. in press). In addition to these finds, the grave also contained bear claws (n = 11, *Ursus arctos*; Bäckström 2001, 18).

The above-mentioned finds in this context make a reconstruction as a weapon grave possible. The deceased was most likely buried with a spatha or seax, indicated by the sheath mount. Other occurring objects are pottery and an iron rod as well as an assembly of small iron rivets and nails. The latter indicate the former existence of a metal-bound wooden vessel. In combination with the weapons and the number of bear claws (11), which strongly suggest the remains of a bear fur, this gives the deceased a fairly high status. The number of animals in the burial has not been determined, but the weight of the bones is *c.* 3,600 g, which is high but not remarkable. It is roughly equivalent of what is expected from a burial with a horse and a few smaller animals from this period (e.g. Prata et al. 2017, tab. 1). Merovingian Period cremation burials with amounts of animals that correspond with the Valsgärde boat burials contain a considerably higher number of bones (cf. Hennius et al. 2016, 85; Hed Jakobsson et al. 2019, 353–363).

Grave 1 from Gamla Uppsala is a Viking Age inhumation burial and boat-grave that has been subject to considerable damage. It held a 35–45-year-old adult whose sex has been osteologically classified as male. The distorted posture of the dead, the accumulation of grave goods, and the skeletons of two dogs placed on top of each other outside the boat give reason to suppose that the grave was reopened and looted not too long after the burial. Thus, the absence of weapons – which should be expected in such a boat-burial – is most likely a consequence of the ancient reopening. After the reopening, the burial still contained an iron knife, 10 arrowheads, a wooden vessel, pottery, horse

12 This is an important observation since unburnt bones would indicate a more complex action in which the unburnt material must have come into the grave after the cremation.

13 Unpublished material by N.-G. Gejvall, Uppsala Universitets Museum för Nordiska Fornsaker (UMF).

14 According to Bäckström's (2001, 18) osteological analysis the sex of the human cannot be determined.

equipment (spikes [to prevent horses from slipping], a bit, trace-hooks [used on horses that pull carts; cf. Nordahl 2001, 26, fig. 23]), a comb, gaming pieces made of bone, a strike-a-light, a piece of flint, a hammer, and a Thor's hammer amulet.

Interestingly, this context includes a relatively high number of animal deposits: the MNI of individual animals is nine, representing two complete dogs (*Canis familiaris*), one complete horse (*Equus caballus*), five claws of a bear (*Ursus arctos*), cranial parts and long bones of sheep (*Ovis aries*) with marrow split, pig (*Sus domesticus*), and cattle (*Bos taurus*), which is an indication of consumption. Furthermore, an undetermined bird (*Aves*) and a fish (*Pisces*) were among the bone material.

In the publication of the boat-graves from Gamla Uppsala, Else Nordahl states that the claws were placed in pairs on the port and starboard sides of the boat (Nordahl 2001, 16). However, the position of the fifth claw is not clear from the publication, and, in the drawing of the excavated grave, the claws (no. 77, no. 305) are depicted on the portside and in the middle of the boat, but not on the starboard side (ibid., pl. 1). According to Nordahl (2001) the deceased person was originally placed on a bear fur, but was then moved to the side in the course of the grave disturbance. However, the degree of disturbance of this grave, in combination with the small number of bear claws that appear to be scattered in the grave rather than in an anatomical position, does not allow for a confident interpretation as a bear fur. The burial of the deceased in a boat in combination with a high number of animal offerings classifies it as a high-status burial.

South of Uppsala lies a cemetery with high-status burials dating to the Viking Age. Grave Alsike II is a much disturbed context with scattered finds and animal bones, but no human remains have been preserved. According to Arne (1934, 25), this context was regarded as originally belonging to grave I in Alsike, an inhumation boat-grave for a deceased male. However, the undisturbed nature of Alsike I, and the fact that the grave goods indicate a chronological deviation of 200 years between the two burials, gives reason to regard Alsike II as a separate construction, dating to the early 9th century (personal communication, John Ljungkvist; cf. Arne 1934, 70–71). Due to the unburnt state of the faunal remains, this context is here regarded as the very disturbed remnants of a former inhumation grave in which the human body was either not preserved or was removed during reopening.[15]

The archaeological remains found at Alsike II are a horse bridle, a double-edged iron sword broken into several parts, an iron whip handle fitting, a gaming piece made of glass, an iron chain from a kettle, a green clay bead, spikes, and other iron fragments. The faunal remains are represented by seven bear claws, the back half of a horse as well as the tibia (shin) and metatarsus (foot bone) of another horse, and the back half of a dog. Five of the bear phalanges are still anatomically connected (Fig. 4), despite the high degree of disturbance of this grave. This indicates that the disruption happened when the organic decomposition of the bear remains was not yet advanced. And, more importantly, it supports the idea of a bear paw and possibly an entire fur in the grave.

Discussion

What these burials have in common is their placement in three boat-grave cemeteries that are tied to economic wealth and political power. So far, women are underrepresented among these graves with ursine remains, which correlates with a study of Migration Period burials from mid-eastern Sweden (Bennett 1987, tab. 81). Other studies, however, mention equal numbers of female graves with bear claws (Petré 1980; Klos 2007; Grimm 2013, 291; Gustavsson/Ljungkvist, this volume;

15 The absence of human remains in Vendel Period and Viking Age inhumation graves, as well as the comparatively bad preservation of faunal remains in close proximity to the estimated original placement of the deceased human, are also known from the cemeteries at Vendel and Valsgärde in Uppland (cf. e.g. Stolpe/Arne 1912; Arwidsson 1977).

Jordahl et al., this volume). Their affiliation to important cemeteries makes them seem to be part of the same burial tradition, yet the graves themselves show striking differences: there are two inhumation boat-graves and two cremation graves, and the number of animal depositions varies from an MNI of three (Alsike II) to an MNI of nine (Gamla Uppsala 1). Even though the two cremation burials containing bear claws (graves 65 and 82 from Valsgärde) cannot be regarded as high-status graves on the basis of the remaining grave goods, the fact that they are situated right next to some of the most elaborate boat-graves in Sweden gives reason for reconsidering this classification. One could argue that there might have been an affiliation to the aristocracy, otherwise they would not have been buried in such close proximity. The number of deposited animals and the species representation are common for graves of both higher and lower social status in Vendel Period Uppland (cf. Strehlau 2018).

Considering the effort and danger of hunting and killing a life-threatening predator like the brown bear, it appears logical that the possession of a bear fur created a certain reputation in a hunting society (cf. Oehrl 2013). At the same time, it most likely had a high value on an economic scale and was thus regarded as a status symbol in the densely populated Uppsala region, where large wild mammals, including bears, were probably already very rare or even extinct (cf. Lindholm/Ljungkvist 2016). However, horses are commonly regarded as status symbols as well, but they occur in 50 out of 83 graves (60.24 %) in the study, which is a much higher number compared to the occurrence of bear claws. There is an even higher number of dogs, which occur in 63 out of 83 graves (75.90 %), but they were probably not seen as status symbols.

Looking beyond this study, it appears that six out of 95 graves in Valsgärde contain bear claws (Tab. 1), of which five are cremations and one is a Late Roman Iron Age chamber grave with an inhumation (cf. Ljungkvist 2008). This corresponds to 6.31 %. In Valsgärde, there are four inhumation graves from the Pre-Roman Iron Age (*c.* 500 BCE–0), 29 inhumation graves dating from the Roman Iron Age (*c.* 0–400 CE) to the Viking Age, and 62 cremation graves from the Late Iron Age. None of the boat-graves in Valsgärde held any faunal remains of brown bear, and it seems to be the same situation in Vendel. Admittedly, the cemetery in Vendel was excavated at the end of the 19th century, and osteological analyses might not have been up to today's standards. However, if it was possible to determine the claws of different types of birds of prey, it seems unlikely that bear phalanges would have been missed (cf. Stolpe/Arne 1912). Cremation graves from the Migration Period to the Viking Age from Vendel contained bear claws in 15 out of 191 cases, which corresponds to 7.85 % (cf. Seiler 2001).

Seven out of 135 osteologically analysed graves in Gamla Uppsala contain bear claws (Tab. 1). This burial area includes the three so-called king's mounds, four boat-graves and seven cremation graves in Prästgården, a grave field located northwest of the royal mounds. Bear claws appeared in the east and west mounds (the middle mound remains unexcavated to date; cf. Sten/Vretemark 1999), in Grave 1, which is mentioned above, and in cremation grave 24 (cf. Nordahl 2001). The remaining three bear-related burials derive from a Late Iron Age cemetery, situated in the village area with 122 excavated cremation graves (cf. Prata et al. 2017). Seven out of 135 graves correspond to a percentage of 5.18 %.

In the Viking Age cemetery of Tuna in Alsike, one grave (discussed above) contained bear claws (7.69 %). With the exception of two burials (XIII, XIV), the excavated graves from this site date to the Viking Age, with some of these dating to the 11th century (Arne 1934). Burials from this time often follow early Christian practices, which would explain the absence of both faunal remains and grave goods. Moreover, Lindholm/Ljungkvist (2016) have shown that the number of bear-related graves started to decrease in the late 7th century. Similar observations exist concerning the Iron Age cemetery of Spånga in Stockholm County. Of the 488 cremation burials, 29 contained *phalanges 3* of *Ursus arctos* (5.9 %), with a peak during the Migration Period and a decline in the Late Iron Age

(Sigvallius 1994, 74–75). The lowest number of graves with bear claws was documented on the island of Adelsö in Birka; only eight out of 1,000 graves with remains of *Ursus arctos* were found here (Swedish History Museum, Digital Archive, accessed online, August 05, 2020). In total, there are 1,922 burials in the six cemeteries mentioned above, of which 66 contain bear claws (3.43 %; Tab. 1). This matches largely with the results of the study on the 83 graves in Uppland (cf. Strehlau 2018). The slightly higher percentage among the material of that study (4.81 %) can be explained by the more substantial proportion of high-status graves.

The comparably rare frequency of bear-related graves and their connection to an upper social class can be compared to the occurrence of animal depositions that are related to falconry. Swedish archaeologist Ann-Sophie Gräslund regards the combination of large dogs (greyhounds), horses, and birds of prey in burials as an indication for falconry (Gräslund 2014, 37). Based on their osteological studies, Sten/Vretemark (1988) note that birds of prey often occur in graves together with other wild birds that are interpreted as decoys and prey. These species typically occur in high-status graves, for instance, in the boat-graves in Vendel and Valsgärde, in the chamber graves from Tuna in Alsike, and also in the richly furnished cremation graves at Rickeby and Gnista in Uppland. In this study, bear furs do not appear in graves that show indications for falconry or contain remains of other wild mammals, but the simultaneous occurrence of the two is known from other very richly equipped cremation graves (cf. ibid.). Moreover, there is a dominance of male individuals both in burials with bear claws and in those with indications for falconry. This largely matches with other contexts outside this study (ibid.).

A difference between falconry and the bear claw burials, however, is the deposition type. While *Ursus arctos* is only represented by *phalanges 3*, animals that are connected to falconry, including dogs and horses, are typically deposited as complete carcasses. Complete animals deposited in burial contexts are normally interpreted as sacrifices (e.g. Kaliff 2004, 28; Mansrud 2004, 94–95; Vretemark 2013, 381). Incomplete depositions, to which bear claws belong, are open to much more varied interpretations. They can represent the remains of a funeral feast, food gifts for the deceased, objects such as furs, amulets, or other symbolic depositions (cf. Russell 2012). The deposition of bear, and also lynx claws is neither the sacrifice of a complete animal nor can it be interpreted as the remains of feasting or food offerings. Assuming that the claws are the remains of furs, these finds, in fact, need to be regarded as a product, a crafted item, possibly tied to social status, rather than an animal deposition, which indicates certain actions in the burial ritual, like feasting or the killing of an animal as a potential sacrifice and as a symbol in itself.

The different frequencies of bear remains compared to those of dogs and horses might be explained by their meaning in the burial ritual. The high number of complete dogs and horses deposited in Upplandic graves suggests that they played an important role in the burial ritual, regardless of the social status of the deceased (Strehlau 2018). Bear furs, on the other hand, seem to have been in the possession of a much smaller number of people in the Late Iron Age, i.e. the Vendel Period and Viking Age. At the least, the rather rare occurrence of bear claws in graves suggests that bear furs should be regarded as an unusual object and grave good rather than as an animal that played an important part in the burial ritual. The differences between the graves containing bear claws indicate that, possibly, social status during the Vendel Period and Viking Age cannot be explained solely on the basis of the burial type or the grave goods that remain visible in the archaeological record today. Likewise, it is possible that those buried with a bear fur were part of a sort of allegiance, who, although they acquired a certain social status, never gained the level of wealth and power that could have been reflected in a lavish burial with a monumental mound or a boat-grave.

Conclusion

The study presented here has shown that the faunal remains of *Ursus arctos* appear with relatively low frequency in the analysed graves of the Vendel Period and Viking Age. The vast majority of faunal remains are those of domestic animals. However, in comparison with other wild mammals, including fur-bearing animals, brown bear remains occur more often in burial contexts. Wild birds appear with a similar frequency in graves, but are often deposited as complete animals in graves with a higher MNI. In addition, bear claws representing bear furs should be considered as grave goods rather than animal depositions. But, even if the total number of graves with ursine evidence is low in several cemeteries, it is striking that, in Vendel and Viking Period central Uppland, they are clearly present in burial places that are strongly connected to the Upplandic upper class. The absence of bear claw finds in boat-graves from Vendel and Valsgärde might be explained by poor preservation conditions and plundering. At the same time, the highest number of graves with bear claws, compared to the total number of graves in a cemetery, is reached in cremation burials in the Vendel cemetery. Its location, 35 km north of Uppsala, and the character of some burials were most recently discussed as being influenced by the northern Swedish regions, which were the brown bear's home and also the area where it was hunted (Ljungkvist/Hennius 2020). It seems that the affiliation to a certain place or group of people was more important than the burial type. Likewise, it is possible that it was easier to get possession of a bear fur in an environment of intensive trade and production and of economic wealth. As is evident from the case studies, social status and reputation might not solely be explained by the sheer quantity of animal depositions, grave goods, and an elaborate burial.

Acknowledgements

This paper was written within "The Viking Phenomenon" project, funded by the Swedish Research Council (grant 2015-00466), and "The Bear in the Grave" project, both Uppsala University.

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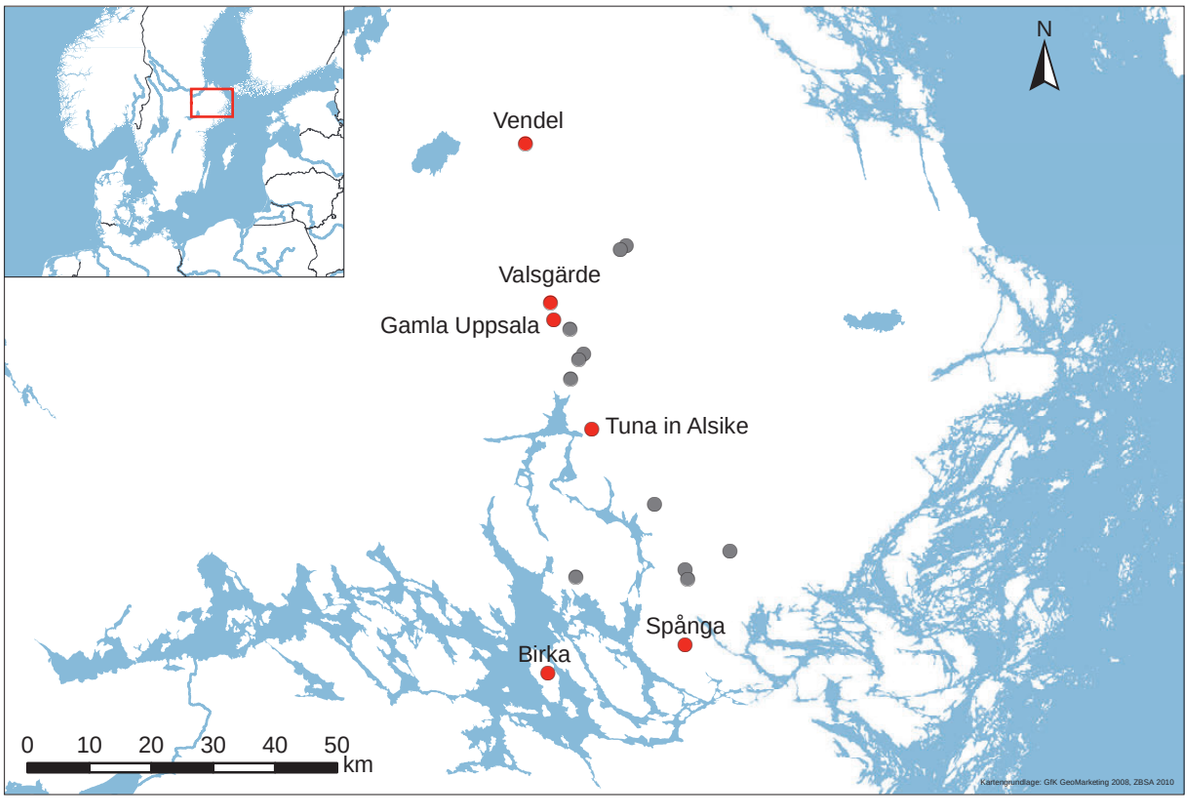


Fig. 1. The investigation area in Uppland, middle-eastern Sweden. Sites that appear in Table 1 are marked in red, other cemeteries that were part of the study are marked in grey.

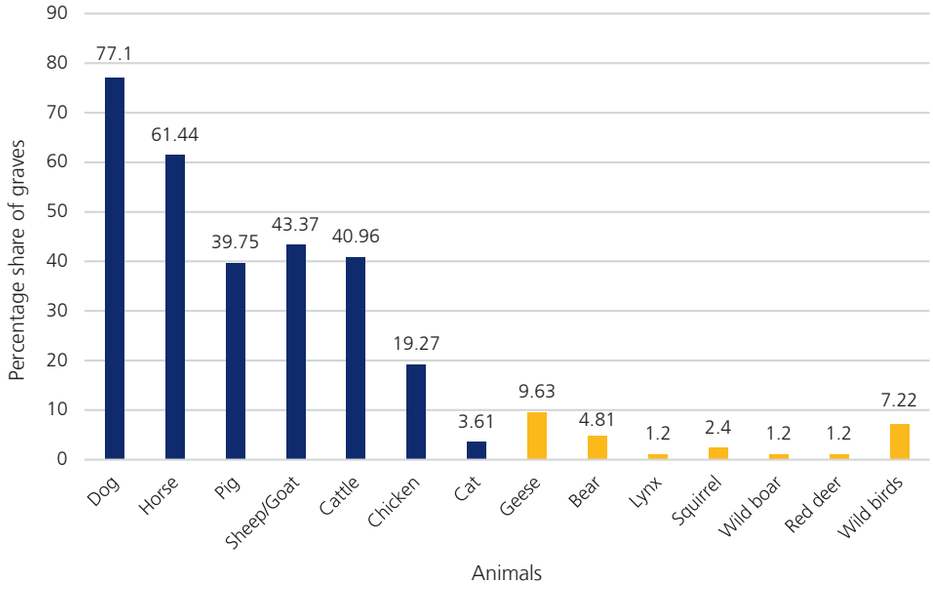


Fig. 2. Percentages of graves from Uppland, middle-eastern Sweden, that contain remains of certain animals. Amounts of domestic animals are displayed with dark blue, those of wild animals with yellow bars.

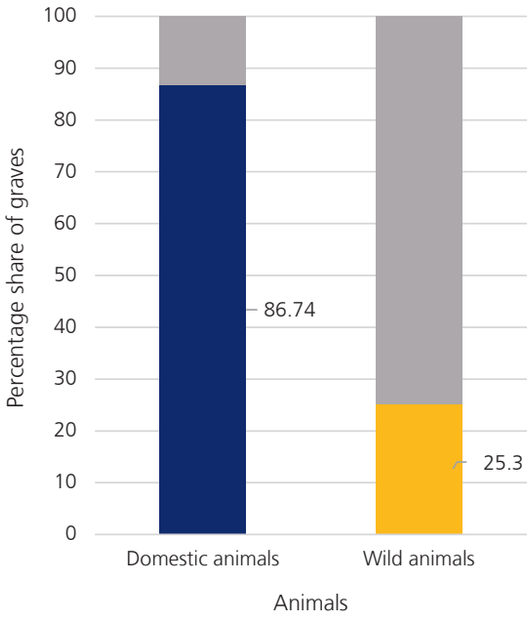


Fig. 3. Percentages of domestic (dark blue) and wild (yellow) animals found among the 83 graves from Uppland in middle-eastern Sweden. Wild animals only occur in combination with domestic animals.

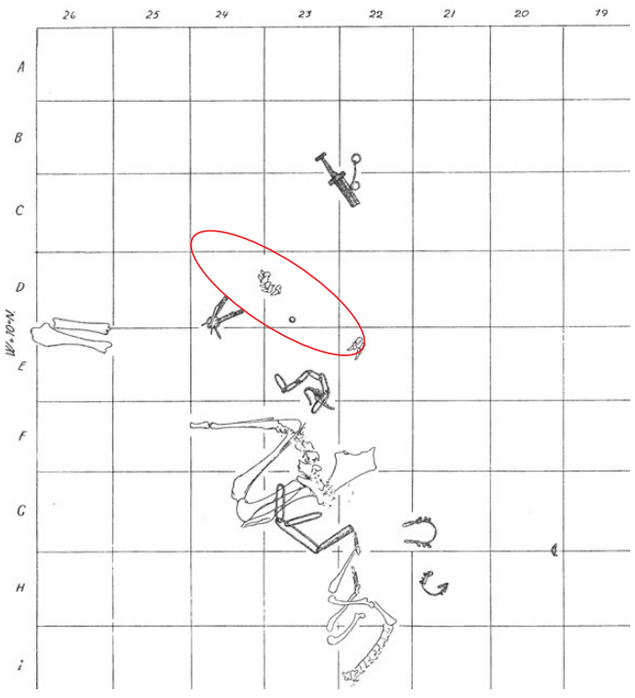


Fig. 4. Grave II from Tuna in Alsike in middle-eastern Sweden, 9th century, with position of bear claws marked by red circle (modified after Arne 1934, pl. 23).

Table 1. The frequencies of graves containing bear claws compared to the total number of analysed graves from a certain cemetery or area during the Late Iron Age in Uppland, middle-eastern Sweden.

Cemetery/area of study	Graves containing bear claws	Total number of graves	Percentages of bear claws in graves (in %)
Vendel	15	191	7.85
Tuna in Alsike	1	13	7.69
Valsgärde	6	95	6.31
Spånga	29	488	5.9
Gamla Uppsala	7	135	5.18
Birka	8	1,000	0.8
Total	**66**	**1,922**	**3.43**

Bear bones from the Viking Age cult place at Frösö church – the unifying factor in bear-human relationships in Viking Age Jämtland, northern Sweden

By Ola Magnell

Keywords: Brown bear, Viking Age, hunting, body-part frequency, butchering

Abstract: The role and significance of the brown bear in hunting, ritual practice and inter-cultural relationships during the Viking Age in Middle Sweden have been studied through the osteological remains from the cult place at Frösö church in Jämtland, northern Sweden. Bear hunting has been examined through age distribution, with age determination based on epiphyseal closure or tooth wear. The results indicate a harvest focused on animals of about 2–4 years of age or adults over four years old. The body-part distribution and butchering marks reflect the transport, utilisation and treatment of bear bones at the site, with furs and possibly amulets made from canines exported from Frösö to other regions. The bear's role in Viking culture and its association with Sami ritual practices is discussed. The bear-human relationship seems to have had a unifying role in the social interactions and networks between the local Viking aristocracy on Frösö and the Sami hunters in the surrounding hunting grounds.

Introduction

In September 1984, excavations at Frösö church in the county of Jämtland in northern Sweden revealed a pre-Christian cult site and, simultaneously, one of the largest brown bear bone assemblages recovered from an archaeological site in Sweden. Below the choir of the church, the remains of a partly decomposed birch tree stump, surrounded by a dark layer with bones and fire-cracked stones, were found (Fig. 1). The composition of the bone assemblage and the archaeological context with the remains of the birch tree indicate that it most likely represents a ritual site dating to the Viking Age. The find is the most striking evidence of place continuity between pre-Christian and Christian cult in Scandinavia, and of a church built on top of a cult place.

Since the first paper was published in *Populär Arkeologi* in 1985, the finds from Frösö church have been presented and dealt with in several earlier papers and publications, mainly focusing on different aspects of the site as a pre-Christian cult place from the Viking Age (Hildebrandt 1985; 1989; Brink 1990; Näsström 1996; Andrén 2002; Welinder 2003; 2008). The osteological analysis of the faunal remains was first presented by Elisabeth Iregren and has been followed by other papers dealing with aspects of ritual practices concerning the animal bones (Iregren 1989; Magnell/Iregren 2010; Magnell 2013). For this study, the osteological brown bear remains from Frösö church have been reconsidered in order to highlight the significance of the brown bear for the societies and their

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 429–452 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134344

cult practices in the northern parts of Sweden during the Viking Age. Using earlier unpublished age distribution data, an effort has been made to study aspects of bear hunting during the Viking Age. Re-analysis of body-part frequency and bone modifications, along with the spatial distribution of bear bones, has been carried out in order to allow additional perspectives on bear hunting and on the role of the brown bear at the cult site of Frösö church.

The site and its chronology

Frösö is an island covering 41 km² in Lake Storsjön, which is situated in the county of Jämtland in the northern part of Sweden (Fig. 2). The area around the lake is characterised by fertile calcareous soils suitable for agriculture and several groups of Iron Age burial mounds. Frösö is situated centrally in this landscape and was, during the Iron Age and in the Middle Ages, the economic and administrative centre of Jämtland (Hemmendorff 2010). The area around Frösö and Lake Storsjön has been described as a sacred landscape, and many of its place names are associated with the Old Norse religion. The place names Frösö, Odensala, Norderön and Ullvi can be associated with the gods Freyr, Odin, Njord and Ull, while the place names Vi and Hov refer to cult sites (Brink 1990; Vikstrand 1993). Frösö means "the island of Freyr". Freyr was a fertility deity and one of the most important gods in the Old Norse mythology.

The place where Frösö church stands is called Hov. The exact meaning of the Old Norse word *hof* is not precisely clear, but it usually refers to a building with a sacred function, which was probably also the seat of the elite and local rulers (Vikstrand 2001, 253; Sundqvist 2007, 159). No archaeological finds of cult houses or large halls have been made near Frösö church. This is as expected since larger archaeological excavations, which are usually required to find these kinds of archaeological features, have not taken place in the area. However, burial mounds in the churchyard and the name "Hov" of the village near the church indicate that the area by Frösö church was important in the Late Iron Age society in the Lake Storsjön area and was probably the seat of a regional aristocracy (Hemmendorff 2010).

Before the renovation of Frösö church in 1984, an excavation was carried out by Jämtlands läns museum. Underneath the floor in the choir, a layer of pulverised wood representing the remains of an earlier floor in the church was found. The stratigraphy below the layer of the wooden floor included a black cultural layer with bones, fire-cracked stones and charcoal covering an area of 3 x 3 m that pre-dates the church. The remains of a stump and the roots of a birch tree were found in the middle of the choir (Fig. 1). Bones were found on top of the roots and not beneath or on the tree stump. Besides an iron pin from a buckle and an iron crook, no other artefacts were recovered. The cultural layer was disturbed in the western part due to the construction of graves and a sepulchral chamber during the 18th century. The eastern and southern walls of the choir also cut into the cultural layer. It is not known whether the layer with bones continues outside the church or not, and thus the original extent of this layer is most uncertain. The excavation resulted in no indications of an earlier wooden church or other structures of buildings beneath today's church (Hildebrandt 1989, 162–163).

Radiocarbon dating results of the tree remains and bones show that the depositions of bones took place in the later Viking Age. Two datings of charcoal to the 7th–9th centuries indicate earlier activities at the place or, alternatively, are a result of the old wood effect. All datings of the bones and the birch tree could be assigned to the 10th and 11th centuries AD, indicating that the tree was standing when the bones were deposited at the site. Three dates of bones from brown bear and one each from cattle, pig and deer all overlap. The longest period of use, based on the radiocarbon dating of six animal bones, is indicated from AD 780–1190 (95.4 % probability), but a combination of all six radiocarbon datings in OxCal suggests that the bones could have been deposited within a short period of 45 years

between AD 980–1025. In addition, one human bone has been dated to the 10th century and three others to the 11th–12th centuries (Fig. 3).

The end of the depositions of animal bones at Frösö church correlates well with the Christianisation process in Jämtland. The area around Lake Storsjön was christianised in the first half of the 11th century. The youngest pre-Christian graves of the area are from AD 1020–1030, and a rune stone on Frösö dating to AD 1050–1080 states that Östman (*Austmaðr*), the son of Gudfast (*Guðfastar*), christianised the county of Jämtland (Gräslund 1996, 22). It has been assumed that the men mentioned on the rune stone belonged to a lineage of chieftains and the local aristocracy in Jämtland (Welinder 2003, 522–523). An alternative interpretation of the rune inscription is that *Guðfastar*, the name of the father of Östman, is a compilation of the words *goði* and the name Faste. *Goði* was the Old Norse title for chieftains and religious leaders of cult places as well as men of great political and social importance (Sundqvist 2016, 182).

The Frösö church standing today was rebuilt in the 18th century; it was first built in the late 12th to early 13th century with the choir, the most sacred part of a church, placed on top of the pre-Christian cult place. It is uncertain whether the church had any wooden predecessor or not (Hildebrandt 1989, 153–154).

Methods

The frequency of taxa in bone assemblages has been assessed by a calculation of NISP (Number of Identified Specimens) and MNI (Minimum Number of Individuals). There are limitations and problems associated with both methods, causing a bias in quantification; as many fragments may originate from one single individual or bone element, differential fragmentation can occur between taxa and sample size (Grayson 1984; Marshall/Pilgram 1993). By using both NISP and MNI, it is possible to better evaluate the relative importance of different taxa rather than relying on a single quantification method. For quantification of taxa and a comparison between Frösö church and other sites, NISP has been used; it is the most commonly used method for inter-site comparisons in zooarchaeology.

Body-part frequency was quantified by NISP, but also by deriving MNE (Minimum Number of Elements) and MAU (Minimum Animal Units). Quantification of body-part frequency based on NISP can be problematic, since the fragmentation of bones generally results in several identifiable specimens that vary between different bone elements. For instance, a skull is usually fragmented into several identifiable fragments, while carpals and tarsals are less often fragmented. By deriving MNE (Minimum Number of [bone] Elements) the problem with differential fragmentation and the risk of counting the same bone several times is avoided (Binford 1978, 50).

Because the number of bone elements varies between different anatomical regions – for example, a bear skeleton only has one skull and two scapulas, but 20 proximal phalanges (phalanx 1) and 26 ribs – MAU has been calculated. The quantification of MAU takes into consideration the anatomical differences in the number of bones in the skeleton in different taxa. By dividing the MNE value with the number of bone elements that is found in the skeleton of a single individual, MAU is calculated. Commonly the minimum animal unit is presented as %MAU and is derived by dividing the MAU values with the greatest MAU value in the bone assemblage (Binford 1978, 51).

The age estimation has been based on epiphyseal closure for grizzly bear (*Ursus arctos horribilis*; Weinstock 2009) and tooth eruption for Eurasian brown bear (*Ursus arctos arctos*; Guskov 2015). Due to large individual variations in tooth wear, the age assessment has not been categorised into absolute ages, but into five groups following a study of Japanese black bear (Shimoinaba/Oi 2015): I – unworn, II – slightly worn (subadult/young adults), III – those with distinct wear facets on the

molariform of adult teeth, IV – teeth with the enlarged wear facets of mature bears, and V – the heavily worn teeth of old animals.

Age determination based on thin-section and dental-cementum has not been used since it is a destructive method and fragile archaeological material often also requires embedding. Further, the application of this age determination method to archaeological material has relatively often shown to be problematic, due to diagenesis of the dental cementum. Diagenetic changes in archaeological teeth, such as the leaching of collagen and the growth of apatite crystallites, can result in the degradation of microscopic structures and may cause bands that mimic increments in the dental cementum (Stutz 2002).

The bone assemblage

The osteological material from the cult place at Frösö church consists of about 5 kg and 588 bone fragments (NISP) that have been taxonomically identified (Table 1). A few bones from bat, small rodents, frogs and western jackdaw are from animals that may reside in churches and have thus been interpreted to represent later, secondary intrusions into the faunal assemblage.

The composition of the faunal remains, which include a large proportion of wild animals, shows that it is a special site and that it differs strikingly from other settlements from the Late Iron Age and Early Middle Ages in the region. Wild animals, mainly bear and elk, make up 58 % of bone fragments from Frösö church, while the corresponding frequencies are 0–3 % at three sites on Frösö island and 25 % at the site of Kyrklägdan on the mainland around Lake Storsjön (Fig. 4). The rather high frequency of wild animals from Kyrklägdan indicates that hunting played a significant role in the subsistence of the settlements around Lake Storsjön, in contrast to Viking Age and early medieval settlements in southern Scandinavia, where the bones of wild game make up only a small percentage of the identified bones.

The most striking feature of the faunal remains from Frösö church is the large amount of 256 brown bear bones, which comprise 45 % of the NISP. This is a species usually represented by just a few single (if any) bones at Viking Age settlements. The other wild game is mainly elk, but also red deer, red squirrel and western capercaillie. Based on MNI, the proportion of wild game is lower, but still high at 40 %. The bear bones originate from a minimum of seven individuals. Brown bear is never the most frequently occurring animal at settlements from any period in Sweden. Two specimens of brown bear were found at the settlement at Kyrklägdan. Otherwise, there are no finds of brown bear at other Late Iron Age and medieval sites in the area around Lake Storsjön.

Further, the composition of the faunal remains of livestock from Frösö church is unusual, with a large proportion of pig bones, which are not common in the northern parts of Sweden where cattle and sheep are usually more common. From Frösö church, bones of pigs make up 61 % of the remains of domestic animals, while, on settlements from this period by Lake Storsjön, cattle, sheep and goats dominate and the frequency of pigs ranges from 13–26 %.

Among the bones are a total of 29 human ones from a minimum of four individuals; two adults, one child aged about 3–5 years, and one infant aged 0–6 months. When the human bones were first identified it was uncertain if they were contemporary with the animal bones or if they originated from a later burial in the church. As mentioned earlier, radiocarbon dating results of four human bones show that at least one is contemporary with the animal bones while the dates of the other three partially overlap, but this could also be interpreted to represent later burials from the end of the 11th or the 12th century. Thus, it is possible that the human bones represent human sacrifices or other ritual treatments of human remains at the site.

Age estimation and bear hunting

Age determination based on epiphyseal closure indicates only a few bones of bears less than 2 years old and a larger proportion of bones that originate from animals killed between 2–4 years of age and about one third having been 4–8 years old, respectively. One fifth are bears older than 8 years (Fig. 5). The kill-pattern based on epiphyses shows large similarities with recent hunting in Sweden, besides a few indications of bears less than two years old from Frösö church. The age distribution according to the epiphyses indicates a killing and hunting pattern directed towards young bears aged 2–4 years of age. However, a large part of the data set for epiphyses may originate from one single subadult individual aged 2–3 years of age that may have skewed the age distribution towards young adults in the 2–4 years age group.

Age determination based on tooth eruption and wear has resulted in an age distribution of one mandible from a subadult animal aged 18–24 months, one young adult, five mandibles of adults and one premaxilla of an old animal, which differs slightly from the age estimation that was based on epiphyses (Fig. 6; Table 2). The age distribution by tooth wear shows that bears of different age groups were hunted, but it differs from age data based on epiphyses, which indicate the hunting of only a few subadults or young adults less than four years old; the most hunted animals are adult ones, which rather indicates that hunting leaned towards full-grown bears.

It is uncertain which age estimation method provides the most accurate picture of the hunting and age profile. Age determination based on epiphyses is based on a large data set but, as mentioned, it may be biased because most of the bones may originate from one individual. The data set based on tooth wear is small, but on the other hand it is based for certain on several different individuals. Both age estimation methods are in accordance with the finding that bears younger than two years old occur in low frequencies at Frösö church, which possibly reflects hunting practices that avoided killing females with cubs or family groups.

Further, it is important to consider that the age distribution of brown bears at Frösö church reflects the animals brought to the cult place in Frösö and it may not reflect the hunted population as a whole, but rather a selection of specific animals.

Based on tooth wear and tooth development of the canine with an open root apex, one mandible has been age determined to 18–24 months. Based on the knowledge that brown bears are usually born in January–February, this mandible is from a bear that was most likely killed in the period July–December. This shows that bear hunting during the Viking Age was not limited to hunting in dens in spring as is often assumed.

Sex estimation has not been possible to assess on the basis of the osteological material. The presence of a baculum (*Os penis*) could have been used to confirm males, but this particular bone element has not been identified. However, to consider this as indicating an absence of males is highly uncertain. If the faunal remains represent leftovers from consumption, it is possible that the genitals of bears were not considered food. Other explanations could be that the bacula have been used for ritual or magical purposes and because of this have not been included with the other bones. Among the Sami, the bacula of bears were used and hung on drums used by the *noadi* (ritual specialist/shaman), and among the Yenisey Ostjaks in Siberia, the reproductive organ of the bear was used as a cult object (Paproth 1962, 70–73; Zachrisson/Iregren 1974, 81).

Body-part representation

The body-part frequency indicates the presence of bones from most regions of the body (Table 3; Fig. 7). The anatomical distribution of the bear is different from that of the other animals, such

as domestic ones and elk in the location from which almost all bones originate; from the head and mainly the mandibles (Fig. 6). This shows that bears were treated differently from other species and indicates that the bear had a specific significance to the humans and in the cult practices at the site. A large proportion of the bear bones also originate from the head, mainly mandibles, but there is also a high frequency of bones from the lower limbs and the paws of both anterior and posterior limbs (Table 3; Fig. 7).

Due to the anatomy of bears, the paws with five digits result in several smaller bones in comparison with the large limb bones. Further, fragmentation may result in a large proportion of bone specimens from a single bone, for example a skull. A quantification (Minimum Animal Unit [MAU]) that considers anatomical differences and fragmentation gives a more correct picture of the body part representation. The MAU shows that bones of different body regions were indeed brought to Frösö; in most cases it was heads and especially mandibles, along with lower limbs below the elbow and knee with paws (Fig. 7).

The meaty upper parts of the limbs show a low representation and, strikingly, no scapula or pelvis has been found, which are large and relatively robust bones that would be expected to have been preserved at the site. Possibly, these body parts were consumed at ritual meals in other areas, such as cult buildings (*hof*) or nearby halls and, because of this, more rarely deposited in the cult place.

In many cultures around the world, there are rules concerning the sharing of body parts of hunted animals and which part belongs to the hunter who kills the animals and which part to the owner of the hunting grounds, or how they are shared between men and women (Altman/Peterson 1988; Rosman/Rubel 1989). Medieval laws from Norway, such as *Gulatingslovi*, state that the shoulder (*skotbogen*), i.e. the scapula, was the part that was allotted to the hunter who killed an animal (Indrelid/Hufthammer 2011). So, were the shoulder and pelvis body parts reserved to the hunters who killed the bears?

The osteological remains from the head have a particular distribution, with several loose teeth from both upper and lower dentition as well as mandibles, but the nine bone fragments from the skull are all from the anterior parts (premaxillare, maxillare, palatinum) by the nose. No cranial parts of the maxilla with molars and posterior part of the viscerocranium and neurocranium have been found. This indicates that the skulls without mandibles and anterior parts could have been placed elsewhere, possibly on poles or in the birch tree.

At ritual sites from the Iron Age in Scandinavia, such as depositions in wetlands and wells, parts from the head and lower limbs are often found very frequently, in comparison with bones from the trunk or upper limbs (Wikborg/Magnell 2017; Magnell 2019). The less meaty parts, the head and lower limbs, could be viewed as the gods' share, while the mortals took care of the meaty parts. Further, written sources from the Viking Age imply rituals with the heads. Ibn Fadlan's narrative of his meeting with the Rus and Al-Tartuschi's description of his travels to Haithabu mention that the heads of the sacrificed animals were placed on poles, and the description of the cult at Uppsala by Adam of Bremen can be interpreted as that the heads of the killed animals were given to the gods by hanging them in the trees of the sacrificial grove (Birkeland 1954, 103–104; Ibn Fadlan 1978, 65; Hultgård 1997, 32).

Ritual treatment of head parts is also a characteristic of bear ceremonialism among several circumpolar societies (Hallowell 1926; Rockwell 1991). The placing of bear skulls in trees by the Finns is an example of a ritual practice that could explain the missing cranium parts from Frösö church (cf. Keinänen, this volume; Piludu, this volume).

No claws (distal phalanges) but only the proximal and middle phalanges of brown bear have been found at the site (Table 3; Fig. 7). This indicates that either the furs with distal phalanges were not brought to the site, or rather that the furs were not deposited at the ritual site and instead were utilised and brought to the houses, or that they were taken from Frösö to other regions.

Among the loose bear teeth there are also remarkably few canines (especially considering that the large canines would not be expected to be lost during excavation, as could be the case with smaller premolars or incisors): There is only one canine, while 21 incisors, eight premolars and 13 molars have been identified. This indicates that canines might have been taken away from the cult place.

The brown bears found at the site were most likely not killed on Frösö. The area of the island is too small to hold a population of bears, and the animals were probably killed on hunting grounds on the mainland around Lake Storsjön. The body-part representation indicates that, while occasionally whole carcasses were brought to Frösö, in other cases it was only specific body parts, such as paws and heads or mandibles.

Butchering and utilisation

Butchering marks have been identified on 61 bear bones, which gives a detailed picture of the butchering process and utilisation of the bear carcasses. The high frequency (29 %) of the bones with cut and chop marks shows that the carcasses were thoroughly utilised.

Cut marks on a mandible, metacarpal and several proximal and middle phalanges from skinning indicate that the furs were an important resource provided by the bears (Fig. 8). Bear claws have been found in burials from the Late Iron Age in the southern parts of Sweden and even in regions that did not hold any bear populations, like Gotland, which indicates that bear skins were a coveted commodity during this period (Petré 1980; Iregren 1988; cf. Grimm, this volume; Lindholm/Ljungkvist, this volume).

Chop marks by the alveoli of the canines of both skulls and mandibles also show that the canines were extracted and removed, probably to be used as amulets and ritual objects (Fig. 9). Bear canines with drilled holes in root apexes used as pendants have been found in burials as well as at settlements and towns like Sigtuna (Wikell 2015; cf. Magnell, this volume, on humans and bears in Sweden). According to folklore from as late as the 19–20th centuries, bear teeth were used for various magical purposes, such as for protection or to bring luck in hunting and logging or as a cure for toothache (Björklöf 2010, 276–277).

Chop and cut marks show that both axes and knives were used in the dismembering of the carcasses. The dismembering marks are found on most major joints of the bear skeleton from the head down to the proximal and middle phalanges (Fig. 8). This further confirms a thorough utilisation of the bear carcasses and that the meat was cut up into smaller pieces. Filleting marks from the cutting of meat from the bones are also found on different parts of the bears, but mainly on the meatier parts of the trunk (Fig. 8). Chop marks indicate that the mandibles were broken for the extraction of bone marrow (Fig. 9). The traces of butchery and cooking reveal an intense utilisation of the carcasses and indicate that feasting on meat from the animals was important.

The finds of fire cracked stones and charcoal in the cultural layer among the animal bones are most likely the remains of food preparation near the tree. All the bear bones are unburned – as are most of the animal bones from Frösö church. However, there is evidence of burning and exposure of fire on the teeth of the piglet and sheep mandibles, most likely from cooking. The absence of traces of burning on the teeth and mandibles of bears could reflect differences in the cooking practices used for various animals, with indications of the roasting of domestic animal mandibles over the fire and possibly the cooking of bear meat in vessels.

The deposition

Gnaw marks made by dogs or other carnivores are only found on five bear bones (2 %), which is a low frequency in comparison with settlements from the Viking Age, where often up to 25 % of the bones are gnawed (Magnell 2017). This indicates that dogs had only restricted access to bones at the site. Either the bones were placed in the tree out of reach of scavenging dogs and other carnivores, or possibly some kind of enclosure protected the cult place. Weathering on the bones, showing as cracks and eroded surfaces, indicates that the bones were exposed for a while, possibly lying on the ground around the tree before the bones became covered by soil formed from decaying leaves and refuse.

The spatial distribution shows that the bear bones were scattered around the birch stump beside bones of elk, sheep, pig and cattle with a concentration to the south of the tree (Fig. 10). Tarsals, metatarsals and phalanges from the posterior paw and carpals, metacarpals and phalanges from the anterior paws, which could be refitted into anatomical units, were found in concentrations indicating that whole paws were deposited at the site. In the northern parts of the excavated area, bones with unfused epiphyses, a mandible from a subadult bear and possibly bones of one whole individual have been found, while most of the bones from adult bears and other animals are concentrated in the opposite area (Fig. 10). The spatial distribution indicates that the main area for ritual depositions was on the southern side of the birch tree, while the bones from the subadult bear on the other side of the tree probably reflect a single event.

Discussion

The large amount of osteological remains of brown bear, along with bones of elk and pigs, from the cult place at Frösö church is an apparent reflection of the importance of the bear to humans during the Viking Age in Jämtland. The bear bones from the site have been used to study different aspects of the bear-human relationship from hunting, butchering and utilisation to ritual practices and regional social interactions between different cultural groups.

Bear hunting

The study of hunting in the past, from periods with or without limited written sources, is problematic, but is made possible by the zooarchaeological analysis of taxa as well as age and sex distribution. This usually requires larger faunal assemblages, and, since bear bones are usually found in low numbers at archaeological sites, bear hunting in the past is often difficult to study. In the light of this, the osteological remains from Frösö church provide us with an unusual opportunity to study bear hunting during the Viking Age, even though we must take into account that the age distribution may not be fully representative, due to their origins in a ritual site.

Based on epiphyses, hunting was directed towards young bears aged 2–4 years and older animals, with only a few younger than two years, which is a harvest similar to present-day hunting in Sweden. At about two years of age the brown bear leaves its mother, so possibly the age distribution based on epiphyses could reflect hunting focused on young, inexperienced bears. Hunting biased towards young bears is usually explained by the fact that this age group has greater mobility, which increases the probability of encountering a hunter (Litvaitis/Kane 1994; Kohlmann et al. 1999; Bischof et al. 2008).

The age estimation based on tooth wear provides a somewhat different picture of the age distribution, with the hunting of mainly adults, about four years or older. This is in accordance with the age of the animals from the Sami bear burials, where most of the individuals were also adults (Zachrisson/Iregren 1974, 66–68). In relation to hunting in Sweden during 1981–2004, the age estimation based

on teeth differs to a certain extent and shows more similarities with bear hunting in North America, with a larger proportion of older animals (Litvaitis/Kane 1994; Kohlmann et al. 1999; Frank et al. 2017).

Even though both age determination methods have provided somewhat different results, both are in accordance with the fact that bears younger than two years old occur in low frequencies at Frösö church. This possibly reflects hunting practices that avoided killing females with cubs or family groups, which would be similar to present-day Swedish bear hunting regulations (Bischof et al. 2008).

Frösö is a too small an island to hold a bear population, and the animals were probably mainly hunted in the forests outside the agricultural core area around Lake Storsjön. The anatomical distribution with higher frequencies of body parts from the head and lower limbs could be interpreted as that it was mainly these parts that were brought to the cult site at Frösö church and are therefore seen as an indication of hunting at a larger distance from the site. It has not been possible to identify who the bear hunters were, they could either have been farmers from Frösö that went on hunting trips, or groups of hunters living in the forested areas around the Lake Storsjön area that belonged to the Sami culture.

Bears and Vikings

The cult place at Frösö church at a place named Hov and the presence of a Viking Age settlement that has been partly excavated, along with Iron Age mounds on the church yard, clearly associated the find with the Viking society on Frösö. Osteological remains of different kinds of livestock, mainly piglets, and especially mandibles, are also a typical feature of ritual sites from the Viking Age (Jennbert 2002; Magnell 2019).

Certain aspects of the faunal remains from Frösö church have been interpreted to reflect rituals that could be linked to the Old Norse religion. The finds of deer teeth and squirrel metapodials from Frösö church can be associated with the Old Norse mythology and the descriptions in *Edda* of the world-tree Yggdrasil, where the squirrel *ratatǫskr* runs up and down the tree and the four deer *Dáinn, Dvalinn, Dúneyrr* and *Duraþrór* graze on its twigs. It has been suggested that the remains of squirrel and deer were used in rituals that were staging the mythology in a symbolic transformation of the birch tree into the world-tree (Iregren 1988). Pigs could have been specifically selected as sacrificial animals on the basis of the association between pigs, fertility symbolism and *Freyr*, based on Old Norse sources (Näsström 2001, 161).

The seasonality of the sacrifices at the site also seems to correlate with the Old Norse calendar ritual feasts known as *blót* from Old Norse sources. An analysis of the seasonality, based on the age of death of juvenile animals studied by age estimation, which was based on tooth development and tooth wear in elk, sheep, pigs, cattle and goat, indicate three annual events; one between October–November, in the winter, one in March near the vernal equinox, and one around the summer solstice at end of June (Magnell/Iregren 2010).

The human remains found among the animal bones could also be interpreted as representing human sacrifices. Written sources and archaeological finds indicate that human sacrifices were a living tradition in Old Norse religion and during the Viking Age, even though this has been a subject of debate (Wikström af Edholm 2020). The human bones could thus be associated with the Old Norse religious practice.

Even though the Old Norse mythology is full of different kinds of animals and several were associated with different gods, the bear seems to have played a minor role (cf. Sundqvist, this volume). Thus, the bear does not seem to be a sacred animal in Viking society and, in the Sagas, the bear is actually described as a commodity (DuBois 2012). However, this does not mean that the bear was an animal of insignificant symbolic meaning to the Vikings. The bear occurs in Scaldic poetry and the Sagas, and it was common in personal names (cf. Lombardi, this volume; Ney, this volume; Nedoma,

this volume). The most striking association of bears with the warrior culture of the Viking society is the *berserkir*, a group of ferocious warriors presumably dressed in bear skins (cf. Sundqvist, this volume). Bear hunting and the killing of the most powerful and dangerous predator in the Scandinavian fauna is also in accordance with the warrior culture of the Vikings and the Sagas and Scaldic poetry, which is full of heroic deeds (Oehrl 2013).

The ritual consumption of bear meat could also have been a means of receiving the strength of the animal. Descriptions of drinking bear blood in order to gain the power and strength of the animal are found in Saxo Grammaticus' historic chronicle *Gesta Danorum* from the 12th century AD, in which the hero Bjarke kills a bear with a sword and commands his companion Hialte to drink the blood of the bear to gain strength. Drinking the blood of killed game is a custom that has spread among different cultures all over the world, and there are historical notes from as late as the 19th century of hunters drinking bear blood in Sweden (Björklöf 2010, 273).

Sami influences

The large amounts of bones from brown bear and other wild animals deposited by a birch tree, along with a body-part frequency that shows that bears were treated differently from other species, has been interpreted as an indication that the cult place at Frösö church reflects the ritual practices of the Sami (Näsström 1996, 77; Welinder 2008, 90–92). In Sami cosmology, the world-tree, or pillar of the world, which connected the different worlds, was a birch tree (Hultkrantz 1996). The importance of the brown bear in the rituals at Frösö church could be understood by the status of the species in Sami mythology and ritual practice, such as the bear burials. Sami myths describe a close relationship between humans and bears in the tale of a woman who lived together with a bear and had a son with him. The bear hunt, butchering and consumption were associated with a complicated set of rituals ending with the burial of the bones among the Sami (Zachrisson/Iregren 1974; Edsman 1994; cf. Piludu; Iregren, this volume).

Even though the osteological remains from brown bear could be interpreted as an indication of Sami influence, they differ in certain respects from those in the Sami bear burials. These only include bones from bear, while at Frösö church the bones of bear are mixed with those of other animals. Further, the Sami bear burials usually include most body parts from one single individual, with an arrangement of the skull and scapulae on a pile of bones along with undamaged skulls and mandibles, while at Frösö church, bones from several individuals are mixed, bones are scattered, mandibles are fractured, and, additionally, chop marks appear on fragments of the skull (Iregren 1988; Magnell/Iregren 2010).

Osteological remains of bear have also been found deposited at Sami sacrificial sites, *sieidi*, often situated by natural features, such as rock formations or stones, where offerings have been made of metals and, mainly, the antlers and bones of reindeer. The dating of these sites spans from the Iron Age until the 20th century (Zachrisson/Iregren 1974, 34–36; Mulk 2009; Salmi et al. 2011, 214–215; cf. Spangen et al., this volume). The *sieidi* sites differ from the deposition at Frösö church in that bear bones do not usually occur in large quantities. Further, bones from livestock are usually rare at the Sami sacrificial sites; instead, the osteological remains of reindeer dominate, which are missing at the cult place at Frösö church. The deposition of bear bones at Frösö church may represent a Sami influence, but it seems that the ritual practices at the cult place do not follow the typical Sami ritual depositions of bear bones found at other sacred places.

Thus, different aspects of the cult place at Frösö church can be associated with both Sami and Viking cultures, which has been proposed earlier (Näsström 1996, 77; Welinder 2008, 90). Both belief systems shared several common ideas, such as the conception of a world-tree, animal sacrifices and rituals performed at specific places in the landscape.

Furs, tooth pendants and meat

The butchering marks indicate intense utilisation of the bear carcasses. Skinning marks and missing distal phalanges (claws) reflect the export of furs with claws from the site. The frequency of burials with bear claws in Sweden decreases from the Migration Period to the Viking Age. This probably reflects an increasing demand for bear skins, which resulted in a decrease of the bear population in certain parts of Sweden, making bear skins an even more exclusive commodity in the Viking Age (Lindholm/Ljungkvist 2016, 13; cf. Lindholm/Ljungkvist, this volume). The bear furs were most likely not only a commodity sold for profit to other regions, but also had a symbolic meaning in Viking Age society, as the concept of the *berserker* indicates. Possibly, the chieftains of Frösö used bear skins as gifts in alliances and meetings with the aristocracies from other regions.

The few finds of canines, along with chop marks on mandibles and skulls from the extraction of canines, indicate the use of these impressive teeth as pendants or amulets, which may have been sold or used as gifts during contact with people from other regions. Finds of bear tooth pendants at a burial in Birka, and in layers from the 11th century in the town Sigtuna in Uppland, show that bear canines were used as amulets and most likely were imported at these two sites (Gräslund 1972/1973, 170; Wikell 2015, 6–10).

Cut and chop marks from the dismembering and filleting of meat, and from the fracturing of bones for marrow, on different body regions show that all parts of the whole bear were utilised and that the feasting on meat and fat from the bears was most likely of great importance at the site. In both the bear feast of the Sami and the *blót* of the Vikings, feasting and the ritual consumption of meat was central.

The bear-human relationship in Viking Age Jämtland

The bones from Frösö church, with brown bears as the dominant animals, but also the large abundance of domestic pigs and elk, indicate that it was a cult place with special meaning and significance. The bear played a central role at the cult place on Frösö, with the feasting on its meat and the depositions of mandibles and other bones indicating a special meaning of the bear to the people involved in the rituals performed at the site. The high frequency of bear and elk, animals that were most likely not hunted on the island of Frösö, shows that the deposition does not represent rituals on a household level at a settlement, but rather public sacrifices and ceremonial feasts involving a larger area around Lake Storsjön, probably hosted by the local aristocracy as the custodians of the cult place.

The *blót*, the Sami bear feast and the sacrifices by the *sieidi* were not only religious and sacred acts, but also important social events and meeting places and arenas for communication (Salmi et al. 2011, 222; Sundqvist 2016). Frösö most likely functioned as a ritual and religious as well as an economic and social centre for the region with meetings of different groups. It possibly also served as a node of communication between Frösö, the Lake Storsjön area and the surrounding forested areas, and also for contact with other parts of Scandinavia through the export of furs and bear tooth pendants, along with other goods. The bear furs were important and exclusive trade goods, or maybe rather gifts in alliances between the aristocracy in Jämtland and the elite in other regions, such as the Mälar Valley in central Sweden or Trøndelag in Norway during the Late Iron Age. The cult site at Frösö church with its bear bones could be understood as playing a role in the control of the bear fur networks by the local aristocracy at Frösö, and as providing an opportunity for Sami hunters to access the wide-ranging networks of the local elite.

In the Sami society, bears clearly played an important role, but they were also a symbol of power and strength in the Viking culture. Bears seem to have been a common interest of both the Sami and the Viking aristocracy of Jämtland with the multi-layered relationship between humans and bears as a unifying factor.

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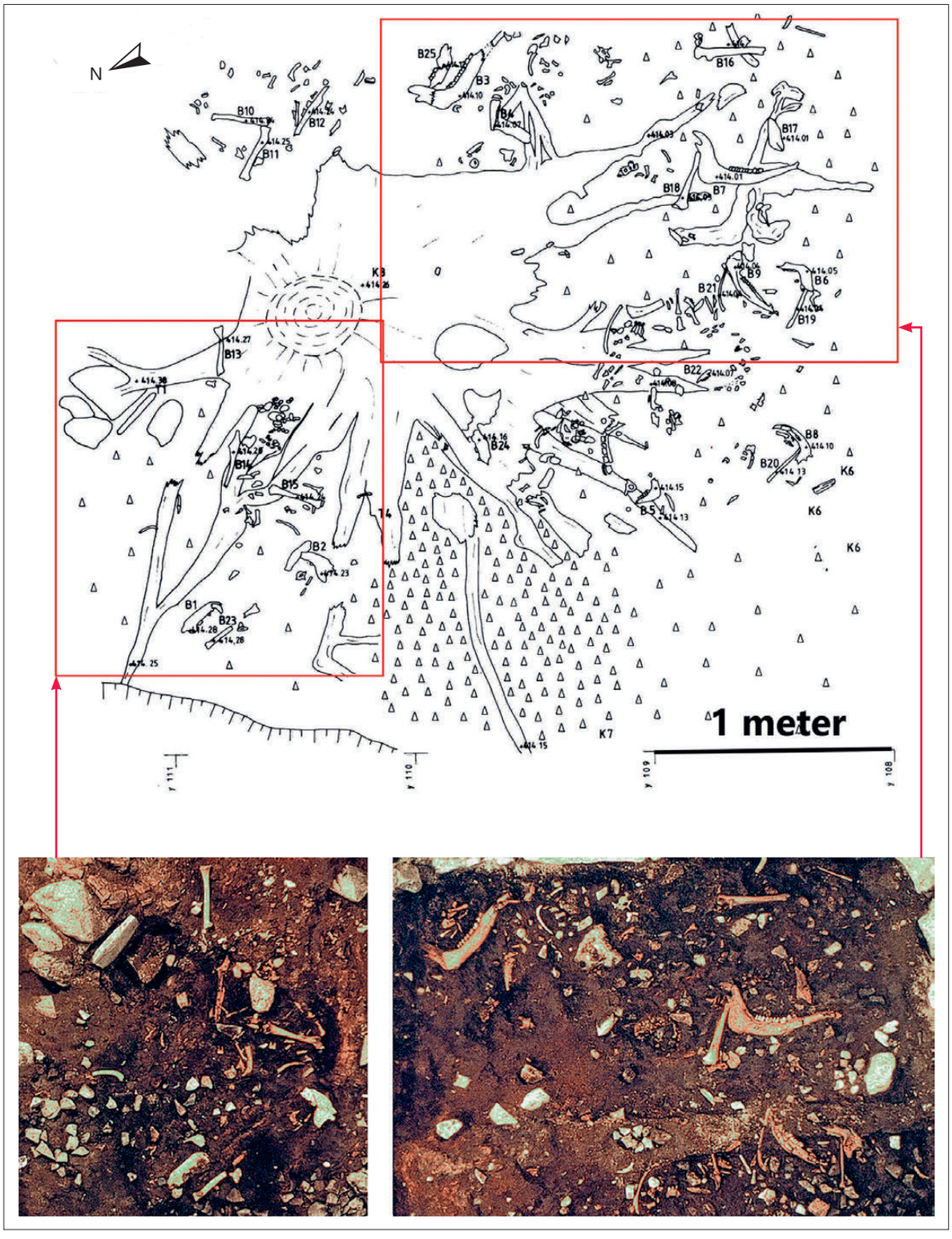


Fig. 1. Stump of birch tree surrounded by layer containing bones and the inner choir walls of Frösö church (photos and plan M. Hildebrandt, Jämtlands läns museum).



Fig. 2. Frösö church and other sites with zooarchaeological analyses from the Lake Storsjön area in Jämtland, Sweden. 1: Frösö church and Prästbordet, Frösö; 2: Västerhus, Frösö; 3: Trusta, Norderön; 4: Kyrklägdan, Ås (map GIS department, ZBSA).

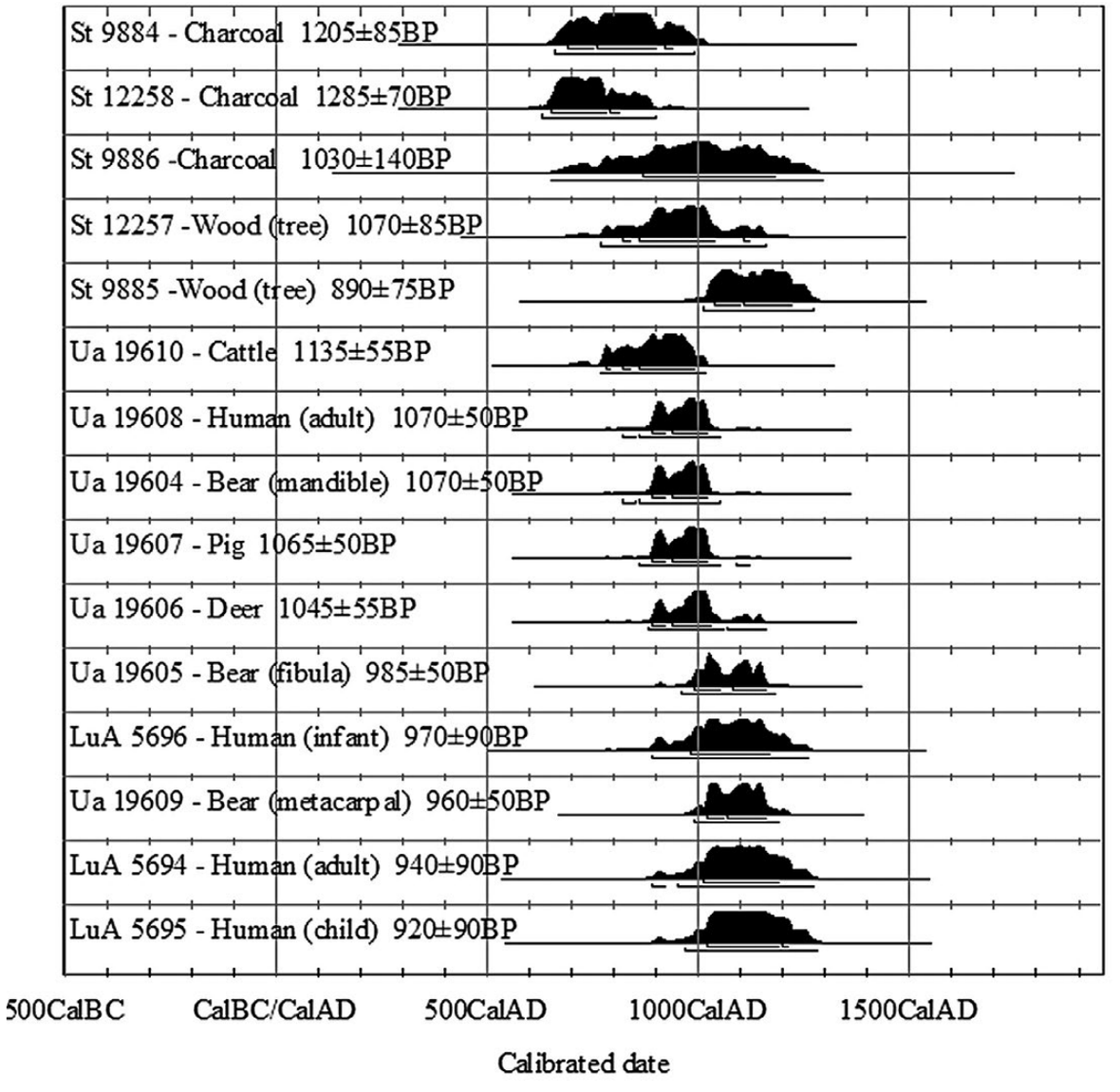


Fig. 3. Radiocarbon dating of charcoal: wood from the birch tree and bones from Frösö church.

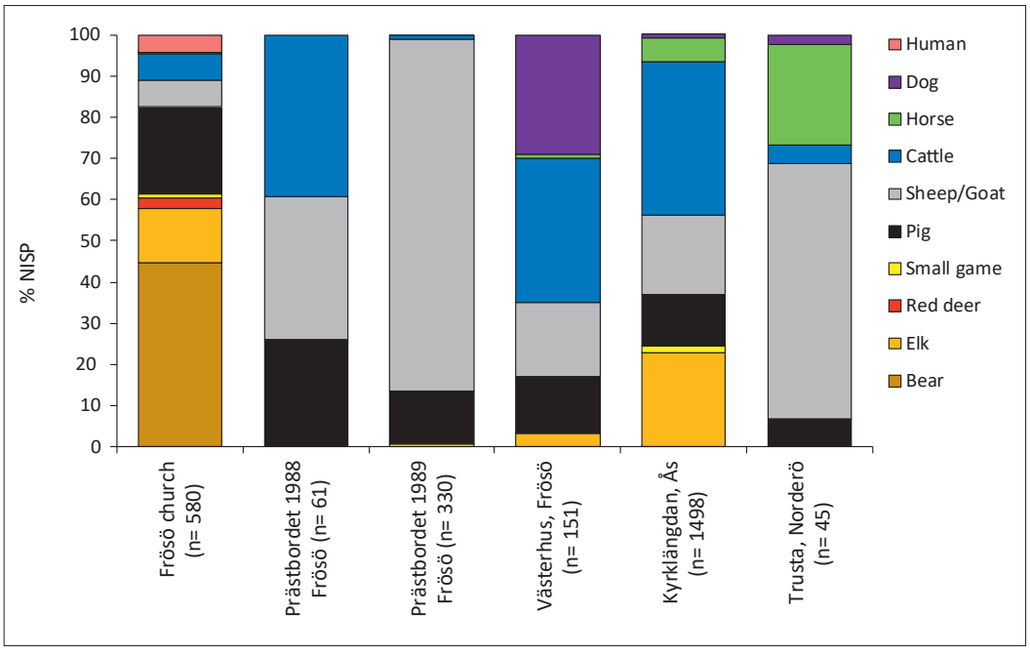


Fig. 4. Frequency of bones (NISP) from Frösö church in comparison with other sites in the Lake Storsjön area: Prästbordet, excavation from 1988, Frösö, 9–11th centuries (after Magnell *2004); Prästbordet excavation from 1990, Frösö, 7–13th centuries (after* Wallin/Martinsson-Wallin *1990); Västerhus, Frösö, 12–14th centuries (after* Thilderqvist *2005); Kyrklägdan, Ås, 11–16th centuries (after* Holmgren *1985); Trusta, Norderön, 8–10th centuries (after* Sundström *1982).*

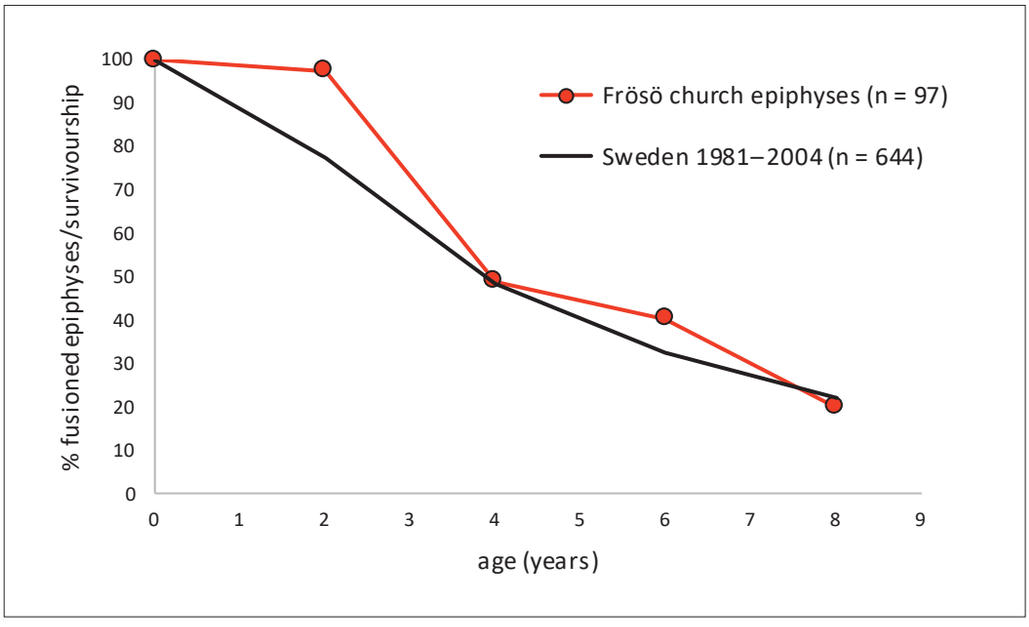


Fig. 5. Age distribution of the brown bears at Frösö church, based on epiphyseal closure of 97 bones. In comparison, that of the total of brown bears hunted and killed in Sweden 1981–2004 (after Bischof *et al. 2008).*

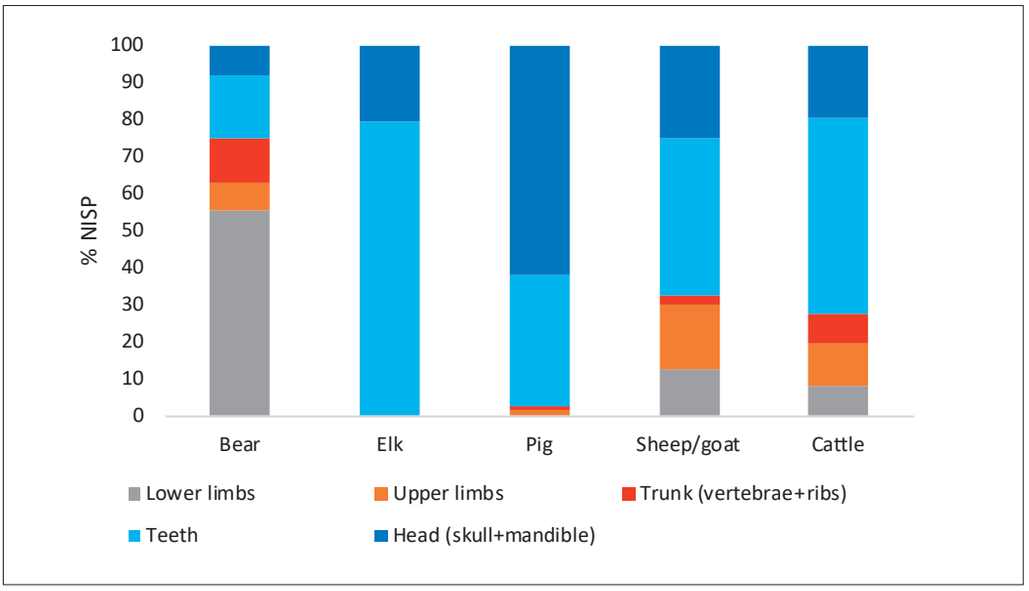


Fig. 6. Anatomical representation based on NISP from different body parts of brown bear, elk, pig, sheep/goat, and cattle from Frösö church.

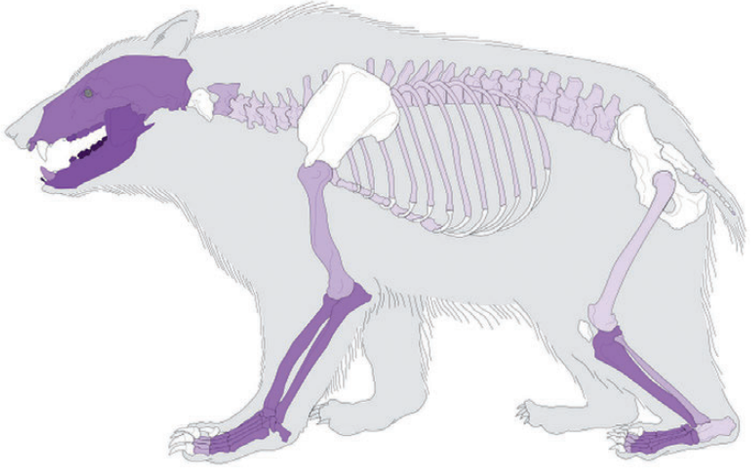


Fig. 7. Anatomical representation of brown bears from Frösö church based on MAU (Minimum Animal Unit) (© 2003 ArcheoZoo.org; after Pales/Garcia 1981, pl. 13)

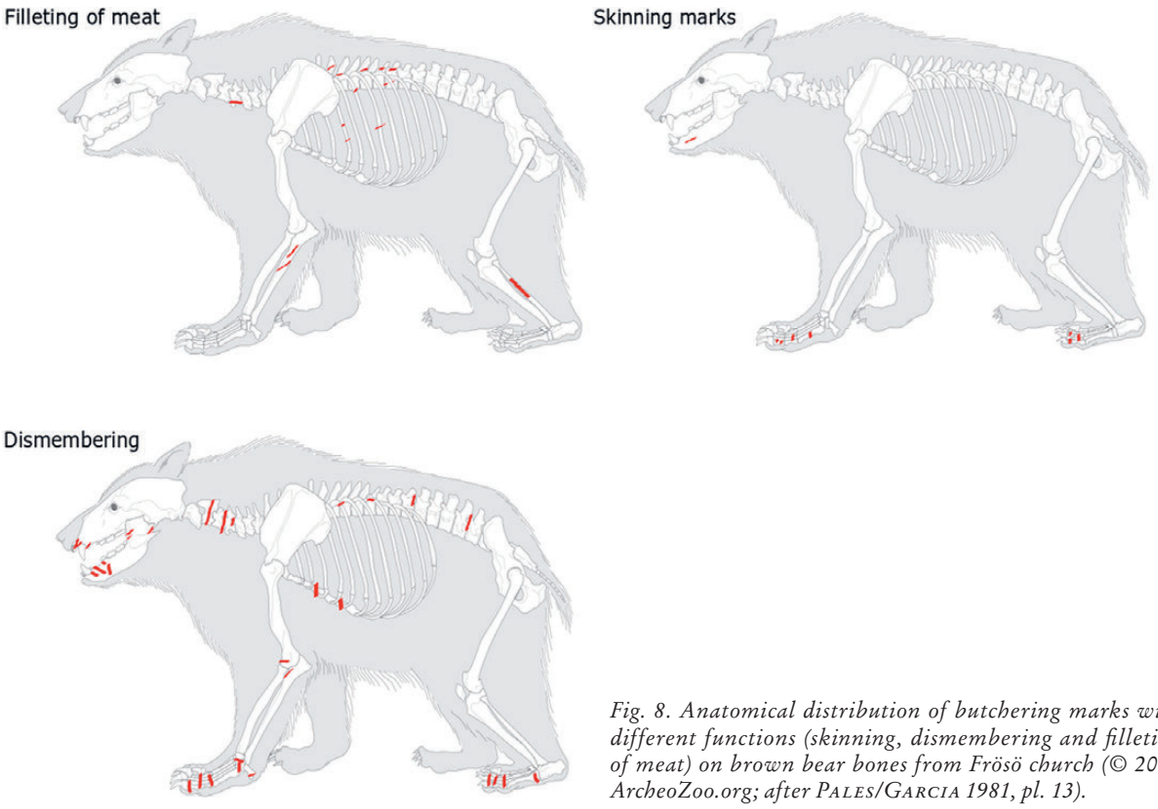


Fig. 8. Anatomical distribution of butchering marks with different functions (skinning, dismembering and filleting of meat) on brown bear bones from Frösö church (© 2003 ArcheoZoo.org; after Pales/Garcia 1981, pl. 13).

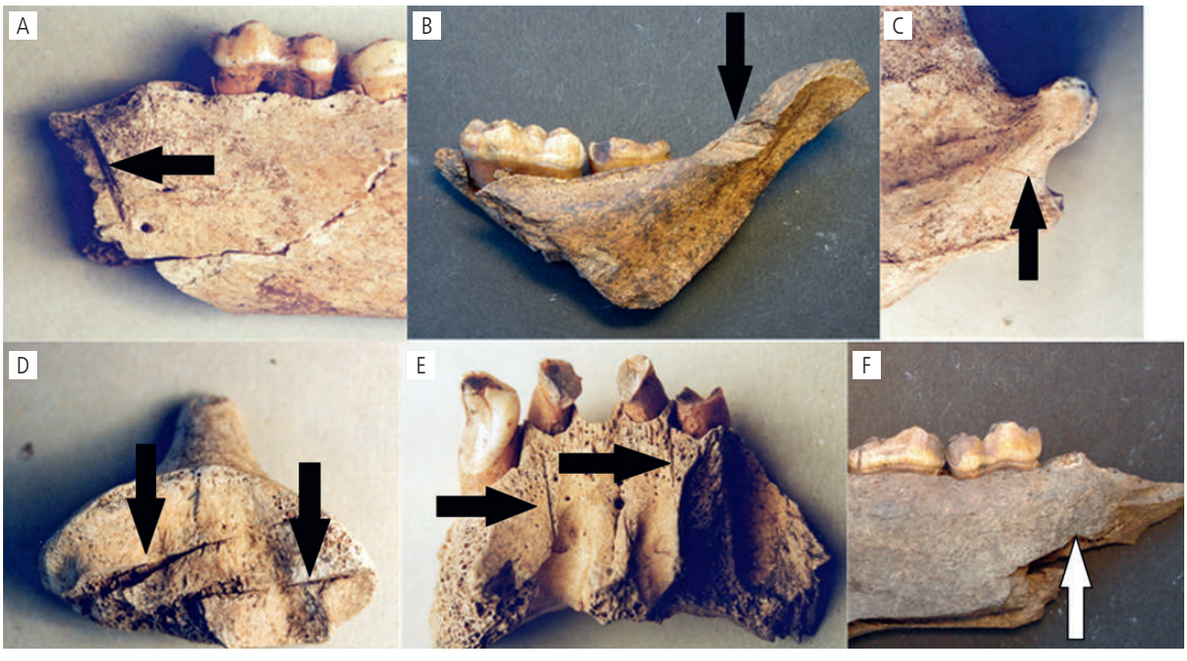


Fig. 9. Brown bear bones from Frösö church with bone modifications from butchering. a; f: Chop mark and impact mark on corpus of mandible caused by the extraction of a canine and bone marrow; b; c: Chop mark and cut mark on ramus of mandible from the dismembering and separation of mandibles from the skull; d: Chop marks on axis (2nd cervical vertebra) caused by the parting of the head from the trunk; e: Chop marks on premaxillare from the extraction of upper canines from the skull (photos O. Magnell).

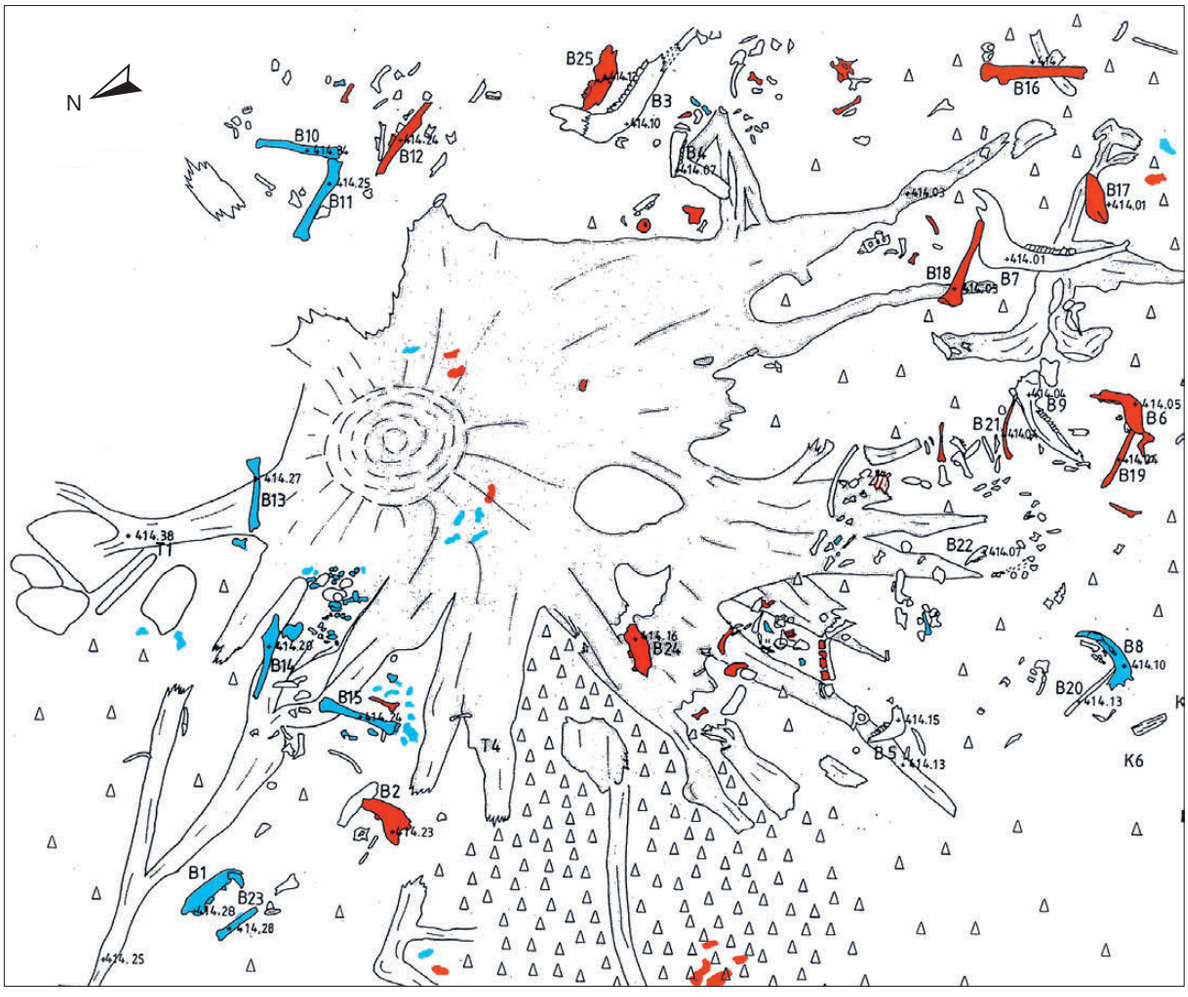


Fig. 10. Spatial distribution of osteological remains of brown bears around the birch tree at Frösö church. Blue: Bones from subadult individual (c. 2–4 years)*; red: Bones from adult animals (graphics O. Magnell, based on* Hildebrandt *1991).*

Table 1. Osteological remains of mammals and birds from Frösö church. NISP = Number of Identified Specimens; MNI = Minimum Number of Individuals.

	NISP	MNI
Brown bear (*Ursus arctos*)	256	7
Elk (*Alces alces*)	77	7
Red deer (*Cervus elaphus*)	14	2
Red squirrel (*Sciurus vulgaris*)	6	1
Domestic pig (*Sus domesticus*)	121	14
Sheep (*Ovis aries*)	5	4
Goat (*Capra hircus*)	1	1
Sheep/goat (*Ovis/Capra*)	33	1
Cattle (*Bos taurus*)	36	4
Horse (*Equus caballus*)	1	1
Dog (*Canis familiaris*)	1	1
Human (*Homo sapiens*)	23	4
Bat (Chiroptera)	1	1
Rodent (Rodentia)	4	1
Passeriformes	1	1
Tetrao urogallus	3	1
Frog (*Rana* sp.)	1	1
Whitefish (Coregonus)	1	1
Salmon (Salmonidae)	1	1
Pike (*Esox lucius*)	2	1
Total	**588**	**55**

Table 2. Age distribution of brown bears from Frösö based on tooth wear of mandibles and one premaxilla.

Tooth wear stages	MNE
I (subadults)	1
II (young adults)	1
III (adults)	4
IV (mature)	1
V (senile)	1
total	**8**

Table 3. Anatomical distribution of osteological remains of brown bear from Frösö church based on NISP (Number of Identified Specimens), MNE (Minimum Number of Elements) and MAU (Minimum Animal Unit).

	NISP	MNE	MAU
Skull	9	2	2
Teeth (skull)	7	4	4
Mandible	12	7	3.5
Teeth (mandible)	35	13	6.5
Teeth	1		
Atlas			
Axis	1	1	1
Cervical vertebrae	4	3	0.6
Thoracic vertebrae	12	6	0.5
Ribs	6	6	0.2
Sternum	4		
Lumbar vertebrae	2	1	0.2
Sacrum			
Caudal vertebrae			
Pelvis			
Femur	2	1	0.5
Tibia	4	3	1.5
Fibula	2	2	1
Calcaneus	1	1	0.5
Astragalus	1	1	0.5
Tarsals	12	3	1.5
Metatarsals	12	5	2.5
Scapula			
Humerus	3	1	1
Ulna	3	3	1.5
Radius	5	3	1.5
Carpals	12	3	1.5
Metacarpals	11	5	2.5
Metapodials	16		
Sesamoid bones	22		
Proximal phalanges	34	33	1.65
Middle phalanges	22	21	1.05
Distal phalanges			

Bear claws in Iron Age burials on Gotland, Sweden – a first survey

By Jane Jordahl, John Ljungkvist and Sabine Sten

Keywords: Bear, claws, phalanges 3, grave, Gotland, Sweden, Iron Age, database

Abstract: This article examines the remains of bear claws discovered in Iron Age burials (c. 500 BC–AD 1100) on Gotland, Sweden. Bears do not occur naturally on this island, meaning that every single find is a result of contacts and trade with surrounding forested regions around the Baltic Sea. This study builds on previous works, and has extended them by surveying the digital records from the Swedish History Museum in Stockholm. It has resulted in the discovery of new finds, so that these are more numerous than previous compilations have revealed. Today, the total number of graves containing bear remains is 148. Almost all finds are third phalanges related primarily to furs, but also to a few other interesting contexts. The presented results are still preliminary, as they will be further examined in J. Jordahl Master's thesis. As the material is of a considerable size, it forms a solid basis for more in-depth studies, involving both a look at patterns and contexts in the practice of depositing bear remains in Gotlandic graves, and also at osteological studies of the actual claws in the burials.

Introduction and general remarks

This article deals with the occurrence of bear claws (phalanges 3) in Iron Age graves in Gotland, Sweden (Fig. 1; Tables 1–2). The island of Gotland is one of the large islands in the Baltic Sea. As Öland, Saaremaa, Bornholm, and the Åland archipelago, it is characterised by its wealth during the 1st millennium AD. This wealth can either be restricted to a certain period of time, as on Åland in the Viking Age (cf. Gustavsson/Ljungkvist, this volume), or may have been prevalent throughout the entire millennium, as in the case of Gotland. Burials from the latter island contain, nearly continuously, a wealth of imports that separates them from burials in other regions around the Baltic. Alongside continental imports such as glass and bronze vessels and beads, there is also evidence for permanent contact and trade with adjacent regions in the Baltic.

The largest group of regional import material in the museum collections which originates from the forest regions is probably represented by combs, or rather the antlers they were made of from elk, reindeer, or red deer (Ashby et al. 2015; Luik et al. 2020). Antler combs were extremely common imports, but forest products of a more exclusive character, particularly the claws of bear and lynx, are also found in burials across the island (Zachrisson/Krzewińska 2019, 104–105).

There is no current evidence that species that, for example, might provide antlers for combs, ever migrated to Gotland after the last glacial period. The only recorded deer on the island were imported for the royal hunting grounds in the 17th century (Nyrén 2012, 173). In the same way, large predators never occupied this island. The reason for this lack is Gotland's isolation, 80 kilometres from the Swedish mainland and about 140 kilometres from the nearest Baltic territory (Latvia). Furthermore,

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 453–468 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134345

Gotland is surrounded by the deepest waters of the Baltic, which hardly ever freeze, even in the coldest of winters.

The considerable quantity of burials furnished with bear claws on Gotland is highly interesting, not least in relation to the numerous graves with claws as burial goods from the mainland of present-day Sweden, Norway, Denmark, Finland (Åland), the Baltic countries, and central Europe (Petré 1980, 5; Grimm 2013, 290–291; Beermann 2016; Lindholm/Ljungkvist 2016, 10–12; Kirkinen 2017, 4). A primary purpose of this article is to highlight further research potential for bear claws in the Gotland burials by compiling current research on the subject and summarising the contexts of hitherto registered bear claws on the island.

This research is partly based on the data and previous work of Lindholm/Ljungkvist (2016). In this analysis, it was possible to see a specific chronology of wild animal skeletal remains as grave furnishings and, for example, a correlation with the use of pit trap systems. By examining graves and pit traps collectively, it is possible to compare the chronologies in two different but concurrent contexts in order to understand the use of animal resources. The present study presents the first results of J. Jordahl's Master's thesis. It has resulted in the discovery of dozens of additional burials with bear claws from Gotland, which makes it possible to approach more solid and independent studies of the material from the island.

Most finds belong to the collections of the Swedish History Museum (SHM). This examination is primarily based upon information that is available digitally and openly on the SHM's website: http://mis.historiska.se/mis/sok/sok.asp. Further information about the contexts can be gained by studies of drawings and excavation reports from the The Antiquarian Topographic Archive (ATA), the Swedish National Heritage Board, and of course in-depth studies of bones from single burials. A more thorough analysis and a further detailed review will be carried out within the framework of J. Jordahl's Master's thesis. So far, no bear claws have been recorded among the collection from Gotland Museum, but additional finds can quite probably be found there.

The survey for this paper, as well as the previous analysis, all refer to the pioneer study by Bo Petré (Petré 1980). During the early 1970s, bone materials with Iron Age date (in Sweden, *c.* 500 BC–AD 1100) were transferred from the SHM's archive to the Osteological Research Laboratory at Stockholm University. Therefore, the archaeologists Bo Petré and Margareta Wigardt made an inventory of the bone material that the SHM administered, and they found a total of 103 burials containing bear claws, distributed over 14 (out of 25) Swedish landscapes. The inspection of these archival materials led Petré (1984a; b) to continue the analysis of burials with bear claws.

Petré's initial and overall comparison indicated that the bear claws occurred in periods during the Iron Age in which regions had an economic upswing. He stated himself that this research was merely an overview, but his early conclusions are still central in demonstrating how contacts and trade can be traced through the analysis of animal bones. Later studies, which included far more contexts, have altered the distribution pattern substantially, which opens up possibilities to have a look at the characteristics and changes in specific regions, not least Gotland (Petré 1980, 10–12; Grimm 2013, 283–285; Lindholm/Ljungkvist 2016, 4–5).

The island is important for this discussion as the many finds of bear claws reveal that obviously a substantial degree of bear hunting was conducted in order to satisfy market demands outside the hunting grounds. Both Petré (1980) and Lindholm/Ljungkvist (2016) agree that the highest concentrations of bear claws in archaeological contexts are found in the central parts of inland Sweden, in the eastern coastal areas around Lake Mälaren, and on Gotland. Various historical and archaeological pieces of evidence show a continuous connection between Lake Mälaren and Gotland over time, which makes these concentration of bear claws seem reasonable. The material culture of Gotland also yields strong evidence for frequent contacts with multiple areas in the Baltic. Therefore, it is highly likely that bear furs could have originated in either present-day Finland, the Baltic countries,

Russia, Belarus, or Poland. Currently, studies on the DNA of ancient bears in Sweden, including finds from Gotland, are performed by PhD student Erik Ersmark, Swedish Museum of Natural History. Broader aDNA studies have also been carried out on European bear finds (Sommer/Benecke 2005, 161).

The distribution of Gotland bear claws in time and space

One of the purposes behind the work with the database is an attempt to make a spatial analysis of the distribution of graves with bear claws in the Gotlandic landscape, and also to try to understand how the bear claws occur over time. At present, not all sites have coordinates; therefore, the spatial analysis is limited to parish level (Fig. 2). Accordingly, due to the limitations of coordinates, this spatial analysis ought to be considered as preliminary.

Since Petré's study, the numbers of registered bear claws in the SHM collections have increased substantially due to new excavations and new finds in the museum's collections. These changes in the volume of data apply to Sweden in general and Gotland in particular. In general, the new materials validate and strengthen the result of Petré's study, but there are also notable differences. For example, according to Petré, there was a significantly lower amount of Migration Period graves (375/400–560/570) with bear claws compared to the previous period, the Roman Iron Age (1–375/400; cf. Petré 1980, 9–12). However, the number of burials for Gotland and Sweden on the whole is actually higher in the Migration Period than in the Roman Iron Age (Lindholm/Ljungkvist 2016, table 2; cf. Lindholm/Ljungkvist, this volume), especially if we consider the length of each period (*c.* 150 years, versus *c.* 400 years). Under these circumstances, it is relevant to establish a more precise dating for the Roman Period graves in the future, and to clarify whether the number of bear claws in graves increases during the latter part of that period. The assemblage of registered bear claws demonstrates that on Gotland the number of these objects gradually increased from the Roman Iron Age to their most frequent occurrence during the Vendel Period. During the following Viking Era, the claws became significantly rarer (Table 1).

A large proportion of the graves might potentially be dated more precisely, which may enable us to discuss trade fluctuations or burial practices in more detail. There was probably a decline in the depositing of bear claws, and other imports, in the mid-7th century, which could mean that the Late Vendel Period (560/570–750/800) has more in common with the Viking Age (750/800–1050/1100), regarding the frequency of claws in burials. Furthermore, some graves are related only to broad time spans: Iron Age (IA) 500 BC– AD 1100, Early Iron Age (EIA) 500 BC– AD 560/70, or Late Iron Age (LIA) 560/70–1050/AD 1100. Potentially, a closer examination of the finds and the funeral practices, plus the conducting of ^{14}C-datings, may lead to a more precise chronological allocation. Most likely, there is some degree of under-representation of Early Iron Age graves (from the Pre-Roman to the Migration Period). In comparison with Vendel and Viking Age burials, these contain fewer datable finds and thus have a higher probability of falling into the broad Iron Age (IA) or Early Iron Age (EIA) categories. Graves from the later periods do, on average, contain more datable finds, such as glass beads and metal objects, and also combs. Even those that are damaged or partially plundered often yield such objects (Table 1).

When it comes to burial customs, 94 graves on Gotland are registered as cremations and 40 as inhumation burials. Another ten graves contain both cremated and uncremated bones. For the latter, a closer analysis may find an explanation for the composition of the finds, but so far these graves are classified only as burials with a mixed content of bones (Table 2).

The spatial distribution illustrates that the graves are scattered around the central parts of the island, with slightly sparser numbers in the northwestern parts. The northernmost graves have been

recorded for Lärbro and the southernmost for Grötlingbo parish. No bear claws have so far come to light in the northernmost or the southernmost parishes of Gotland (Fig. 2). The concentrations reflect many excavated graves, as e.g. the two burial sites Barshalder and Rojrhage (SHM 3262; 334401; cf. Rundkvist 2003), located in the Grötlingbo parish. Furthermore, there is also a high proportion of osteologically analysed burials, which probably led to a substantial number, or rather an overrepresentation, of identified bear claws (Rundkvist 2003, 58–59). Other concentrations are known from the Broe (SHM 35335) burial ground in Halla parish and finally the Trullhalsar (SHM 8555) burial site in Anga parish (Fig. 3).

The recording and study of the graves with bear claws is challenging in different respects. A source-critical aspect concerning the registration from the SHM is whether the species assessment regarding the phalanges is correct. According to previous studies, there is a certain misjudgement regarding the claws that have been found. Claws have, for instance, been mistaken as belonging to seals or dogs (Petré 1980, 8; Lindström 1995, 5; Lennblad 2008, 25). One such example is a burial in Asarve (375/400–560/570), in Hemse parish (SHM 8859:9) that does not contain a seal claw, as stated in the original catalogue, but one of a bear, as a re-analysis has shown.

Another lesson can be learnt from the analysis of animal bones during the so-called "Storgravsprojektet" ("Chieftain's graves project") from 1988 (Sten/Vretemark 1988, 145–156; Sten 2013, 223–231). After their study had been published, they learned that they had missed some bear claws in their analysis. Since these had originally been interpreted as evidence for furs, the claws had been categorised as archaeological objects and placed in the archaeological collections. This illustrates the problems in finding objects in museum archives, due to different mind sets about the organisation of the collection (pers. comm., S. Sten, August 3, 2020).

Digital records from the SHM contain descriptions that vary considerably from the original excavations reports, which affects the quality of the data. In the framework of the present paper, there has not been enough time to gain supplementary excavation data from the ATA archive (Lindström 1995, 5; Grimm 2013, 279; Lindholm/Ljungkvist 2016, 10). Distinguishing individuals in double graves can be troublesome, too, if the individuals have been placed close to each other (Johansson 2007, 35; Lennblad 2008, 24–25). A similar case to that effect is the presumed double inhumation with the remains of an actual bear skin, found in a large cist from Nedre Aure, Voss, in inner Hordaland, Norway (Grimm 2013, 282).

So far, third phalanges are the only identified bear bones in Gotlandic graves (Sigvallius 1994, 76; Jennbert 2003, 142–144; Lindholm/Ljungkvist 2016, 13). This largely follows a pattern that can be observed for other parts of Scandinavia. As bears are large animals, it is highly unlikely that additional bones have been missed, perhaps with the exception of single first or second phalanges. All excavations following the SHM number 30,000 (except those that are connected to Rundkvist's study of Barshalder [Rundkvist 2003]) cannot be studied via the SHM, but require archive work at the ATA.

Drilled bear claws are absent in the material from Gotland, and neither are there remains of mounting devices to which bear claws could have been attached, as are known from Lithuania and Poland (Petré 1980, 8).

At least in the case of inhumations burials, it should be possible to prove the presence of actual furs. On Gotland, the preservation conditions for organic material, particularly bones, are often good, primarily due to the limestone bedrock. Further, several inhumation burials contain many copper alloy objects which, in general, means favourable preservation conditions for textiles and potential parts of furs that have been in contact with that metal. The conditions are, in other words, partly similar to those that have been successfully examined in Finland by Kirkinen (2015).

A source-critical problem for estimating the amount of Gotlandic bear claw finds lies in the fact that most inhumation burials were excavated during the late 19th and early 20th century. The excavation

procedure was, back then, often considerably cruder, at least from a modern, purely technical point of view, which most likely has affected the number of claws discovered in many burials. One cannot expect the archaeological records to be of present-day quality standard. In the ATA's archives, however, there are several illustrations of inhumation burials with detailed information about the positions of the bodies and finds, including the bear claws in cists, chambers, etc. An additional concern is that many inhumation burials have been plundered or disturbed. This raises uncertainties regarding the original location and number of the bear phalanges. Related source-critical problems apply to the cremation burials; the burnt claws are not found *in situ*, and, for various reasons, many (or most) bones are often not deposited in the burial. In addition, we know that some early excavators did not prioritise the recovery of all burnt bones from the cremation burials.

Furs or not?

One of the most conventional arguments for furs is that the phalanges are remains of paws that can be identified when a number of phalanges are found closely grouped *in situ* (Jennbert 2003; Grimm 2013, 284; Kirkinen 2015, 109; 2017, 3–7). These arguments for furs are of course more difficult for the Gotlandic cremation burials, even if the number of claws is substantial in several cases. In some inhumation burials, the evidence for furs is much stronger. One case to that effect is burial 1/53 from Hallvede (550–750/800) in Eke parish (SHM 25133); the bear claws (paws) there are clearly represented by four groups around the buried individual (Fig. 4). In a second case, a weapon burial from Broa (550–750/800) in Halla parish (SHM 20517:13), the grave contained eight bear claws. These were located in two groups, one by the feet and one above the head of the deceased (Fig. 5). This grave seems to be undisturbed, thus one can take as given a fur with only two paws attached. The third case is an earlier inhumation from Smiss (*c.* 160/180–325) in Eke parish (SHM 16113; Lund Hansen 1987, 446). Likewise, the grave displays an example with claws distinctly positioned in the four corners of the cist: three times five and one time three (Almgren/Nerman 1923, fig. 156a; Fig. 6). Moreover, the grave's overall preservation degree is high.

In two undisturbed burials of women, each with a complete set of jewellery, we see another way of depositing bear claws. In the first case, grave 280D from Ihre Hallvede (550–750/800) in Hellvi parish (SHM 20826), only two bear claws were found in a surprising location, namely in a bronze cauldron (Fig. 7). The location of this vessel is not shown precisely on the excavation plan of the grave's bottom level, but it may be vaguely marked as a circle at the top to the right of the cranium. Furthermore, the preservation conditions for the skeleton and probably for other animal bones in this grave were limited. However, from the same grave, there is a well-preserved Cypraea (cowrie shell), which suggests that claws might also have been preserved (Nerman 1955, 211; Ljungkvist 2010, 427–428). In the other case, a burial from Allekvia (550–750/800) in Endre parish (SHM 24277:3), the preservation conditions are even better. According to the original collection description, there were two bear claws in the grave, one of which is clearly depicted on the left side of the skull according to the field drawing. However, the other registered bear claw is difficult to review in the drawn plan (Fig. 8).

These two female burials reveal that there are perhaps some alternative explanations for claws in burials instead of furs. So far, the claws have only been interpreted on the basis of the grave plans, and it is still difficult to tell if they show any marks or have been modified in some way. However, they have no drilling holes, which would indicate a use as pendants, and the cauldron in grave 280D was too small to house a complete bear fur. In this respect, grave IV from Rösta, Ås parish in Jämtland, middle Sweden (10th century AD), is worth mentioning, too (Fig. 9). Here, however, two claws were found in relation to a bag, placed by the waist of the buried person (Kjellmark 1905, 369).

So, if the claws in these cases do not represent furs, what alternative explanations are there? It is still too early to tell if these cases represent a broader pattern, but they raise a number of questions. For example, were parts of bear paws with attached claws deposited in graves, and might the bronze vessel from Ihre 280D or the bag from Rösta IV contain preserved hair fragments from a paw? These graves might explain why a number of burials with bear claws contain only 1–5 claws. A small number of claws is thus perhaps not always related to post-cremation activities or the plundering of inhumation burials. Another tempting alternative is that the claws represent an amulet with similarities to much later specimens from the Siberian Khanty culture in western Siberia, or even 19th century objects from Swedish Lapland (Kirkinen 2017; cf. Fig. 10).

Gender and social aspects of the burials with bear claws on Gotland and in Norway

According to the registered burials that have been gender-assessed, it seems that bear claws are nearly evenly distributed between male and female graves on Gotland. The same pattern seems to appear among the Norwegian graves (Grimm 2013, 282–283). Burials with bear and lynx claws on Gotland do not belong exclusively to a distinct higher social stratum in the population. Previous studies show that bear claws are frequently found in rich burials, but, depending on the period, also in burials from the middle levels of society (Lindholm/Ljungkvist 2016, 12). In the near future, J. Jordahl will perform an in-depth study on whether bear claws can be found in specific gender-related funerals, and to what degree bear claws are related to individuals of specific social groups.

With regards to Norway, both male and female graves have yielded bear claws, and the burial furnishings range from very wealthy to rather poor (Grimm 2013; cf. different contributions for Norway in this volume). These burials, mostly cremations, are most common in the Migration Period and are thus older than the majority of the graves on Gotland. The source situation is special for Norway, since roughly a dozen burials, mostly inhumations, have yielded actual bear skins with preserved hair found jointly with claws.

Summary and conclusions

This study strengthens and underlines patterns observed in previous research; bear remains were deposited in Gotlandic graves throughout the entire Iron Age (*c.* 500 BC– AD 1100). The remains are so far entirely represented by phalanges 3, and the majority are probably related to furs. In some cases, however, pairs of claws in well-documented inhumation burials do not appear to be related to complete furs. They seem rather to have served another purpose, perhaps as amulets.

The burials in this data set can be subject to more detailed analyses regarding the deposition patterns in the landscape, but they can also be used for studies of their social context, their gender relation, their spatial location at specific cemeteries, and their dating. Further, more detailed analyses of the actual claws can potentially reveal details about the size of the animals, the handling of furs, and perhaps even changes in import patterns.

Some developments have previously been noticed in the frequency of bear claw burials in the Swedish material as a whole (Lindholm/Ljungkvist 2016). The burials on Gotland, like those on the Swedish mainland, were most common during the Migration and Early Vendel Periods (*c.* 400–650), while a significant decrease began in the Late Vendel Age and continued into the Viking Age (*c.* 650–1,000). In mainland Sweden, it appears that bear parts became more exclusive and increasingly related to particularly high-status burials. This might indicate unsustainable hunting in mainland Sweden and perhaps even other regions around the Baltic, which made bears rarer and

pelts more exclusive as well as valuable due to an increased scarcity. Comparable in relation to prices and increased pressure, this is even today a far too common phenomenon, from the tuna and cod fishery to the hunt for tigers, elephants, and rhinoceros.

Gotland is indeed a place where the sheer volume of various imports is massive. Petré (1980, 12–13) paid considerable attention to Gotland and its relation to an early fur trade. The high frequency of bear claws shows that this animal, together with lynx (claws; cf. Zachrisson/Krzewińska 2019, 104–105) and wild herbivores (antlers; cf. Ashby et al. 2015; Luik et al. 2020) – i.e. products of the forested regions of Scandinavia and regions on the other side of the Baltic – played a vital role in the broad and complex trading webs during the 1st millennium AD. It also indicates that the remains of large predators were displayed by a broad range of the population of Gotland, who had never seen a large mammal in the wild of their island. As mentioned earlier in this article, there is no evidence of large wild animals on Gotland from prehistoric periods. Together with other large mammals, such as the deer depicted on the Gotlandic picture stones (most recently Oehrl 2019, 161–168, 179, tables 159–167, 183c), bears probably played a role in myths, religion, and storytelling.

In mythology, sagas, and perhaps even for present-day archaeologists, bears are primarily associated with the male sphere. This is hardly surprising due to their size, strength, and potential ferocity in a conflict situation. However, according to the burial records, there is no striking difference between the occurrences of claws in male or female burials on Gotland. This makes the bear in burial connections even more complex and interesting. Nevertheless, we should not rule out that more variations can be revealed from the burial records by analyses that involve the age and status of the buried individuals. Other important variables are related to the potential size of the animals, the number of deposited claws in burials, and the question of how and where they were placed in inhumations. In short, there is far more to explore about the remains of this animal found on an island in the middle of the Baltic.

Acknowledgements

John Ljungkvist's work on this paper was undertaken within "The Viking Phenomenon" project at Uppsala University, funded by the Swedish Research Council (grant 2015-00466). We would like to thank Senior Curator Johnny Karlsson at the Department of Collections and Research, the National Historical Museum, Stockholm, the ATA (The Antiquarian Topographic Archive), and the Swedish National Heritage Board for providing grave plans. Also, thanks to Oliver Grimm and Sigmund Oehrl for their essential input and feedback. Language reviewing was carried out by Dostan Rashid.

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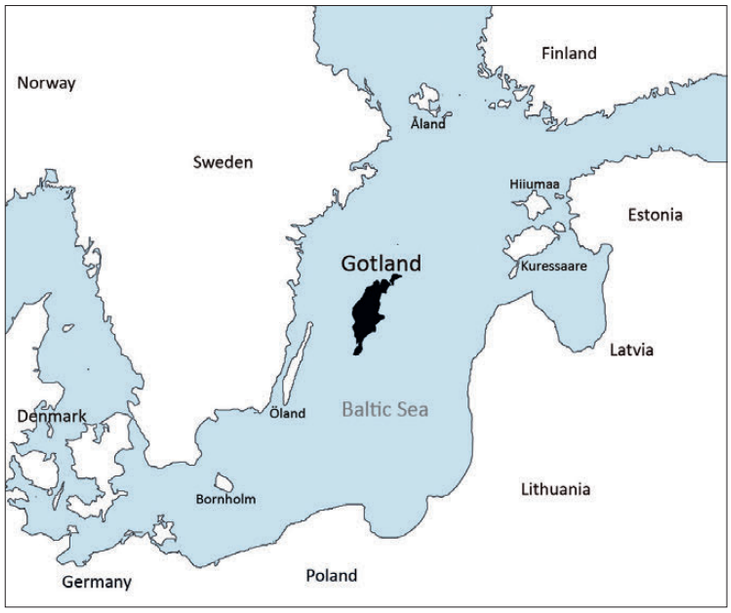


Fig. 1. Location of Gotland in relation to the surrounding mainlands and other larger islands in the Baltic Sea (after Google Maps 2020, modified by J. Jordahl).

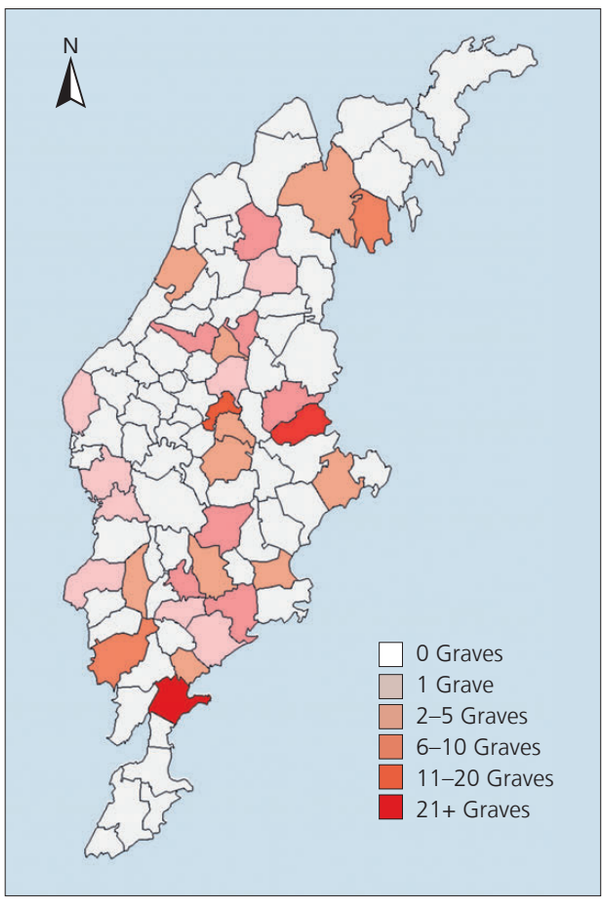


Fig. 2. The distribution of graves containing bear claws on Gotland (after Google Maps 2020, modified by J. Jordahl).

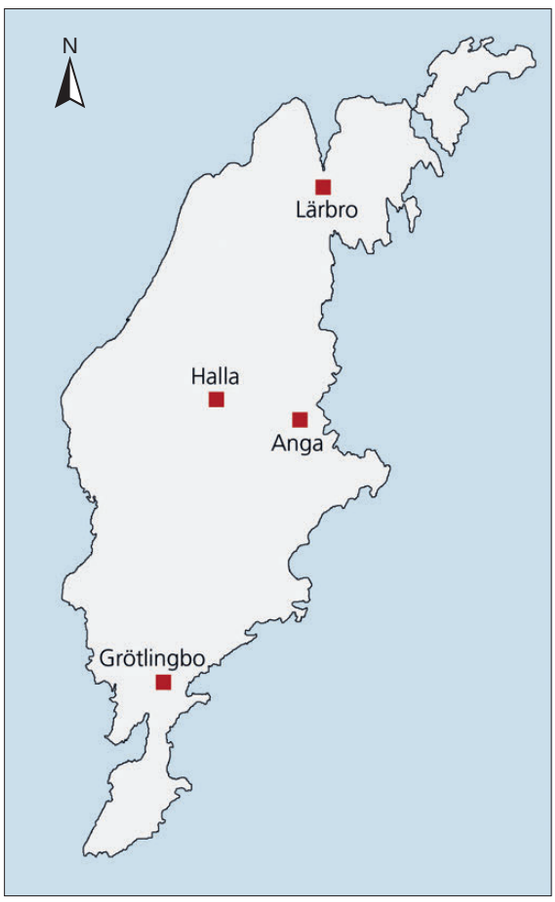


Fig. 3. The mentioned parishes with a high concentration of bear claw finds (after Google Maps 2020, modified by J. Jordahl).

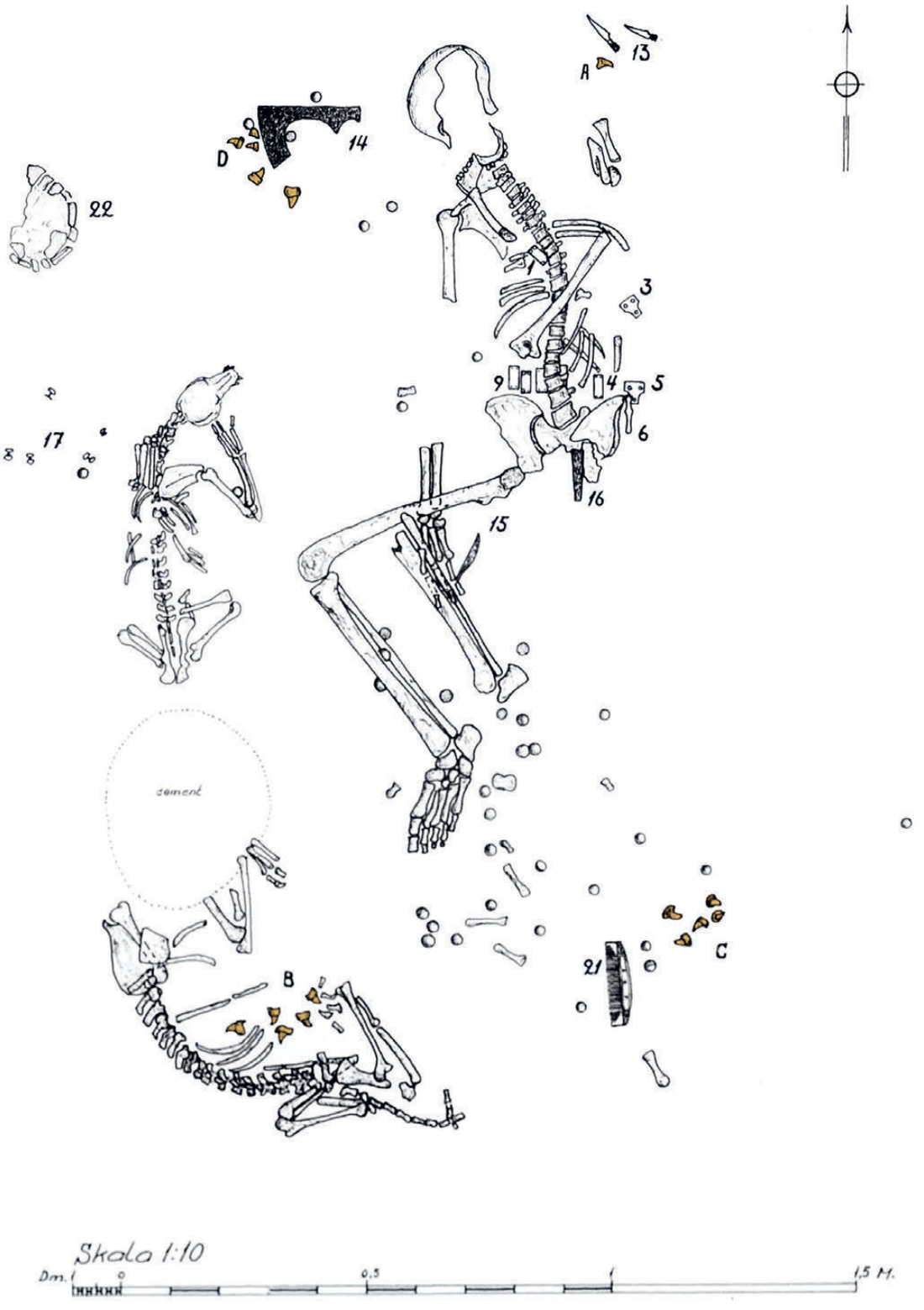


Fig. 4. A field drawing of grave 1/53 from Hallvede (550–750/800), Eke parish (SHM 25133, ATA: Go 1874F; unknown artist; image modified, with bear claws highlighted in brown, by J. Jordahl).

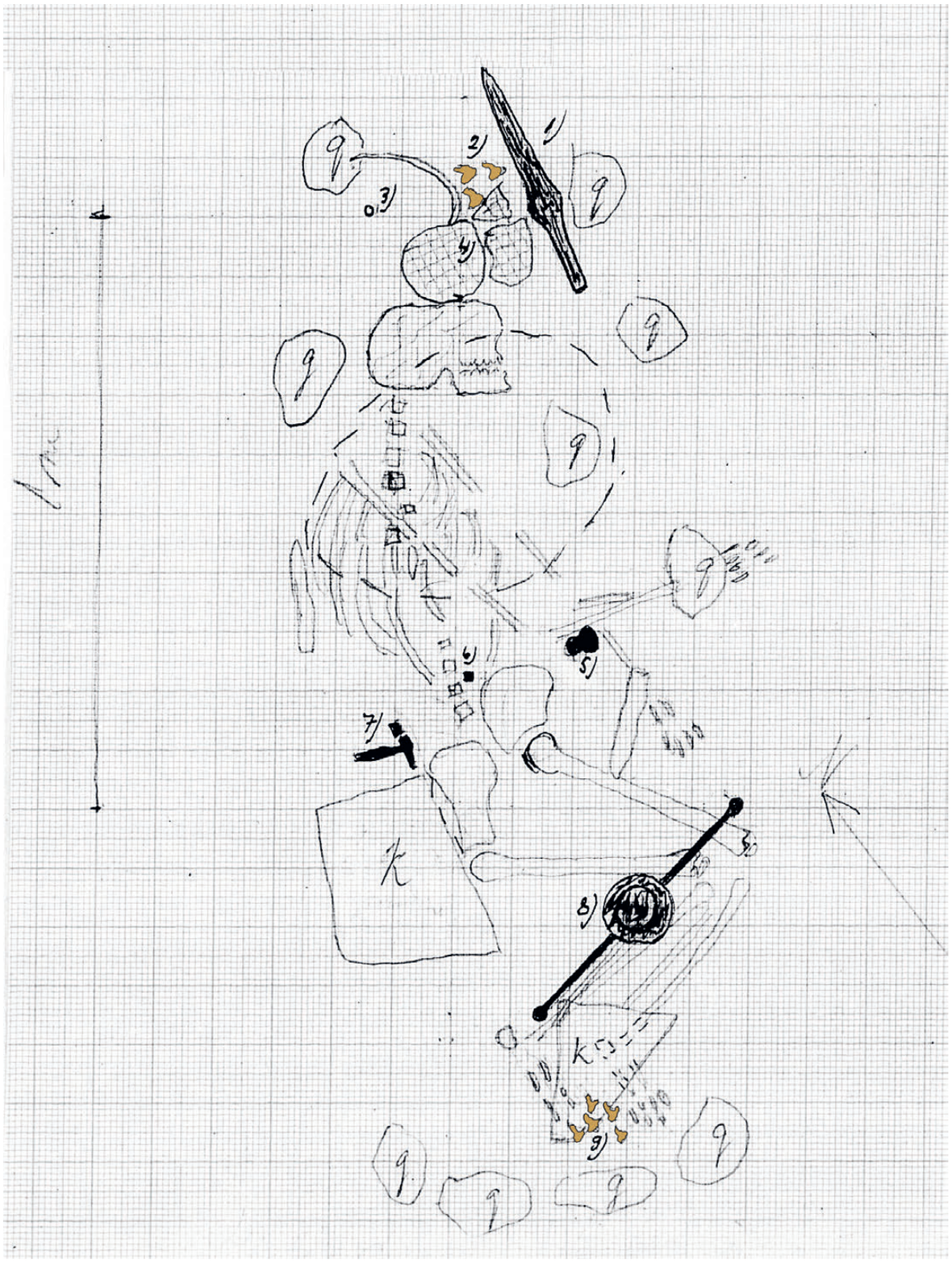


Fig. 5. A field drawing of grave 13 from Broa (550–750/800) in Halla parish (SHM 20517, ATA: Go 2363 F; unknown artist; image modified, with the two concentrations of claws by the feet and above the head [left of the spearhead] of the deceased highlighted in brown, by J. Jordahl).

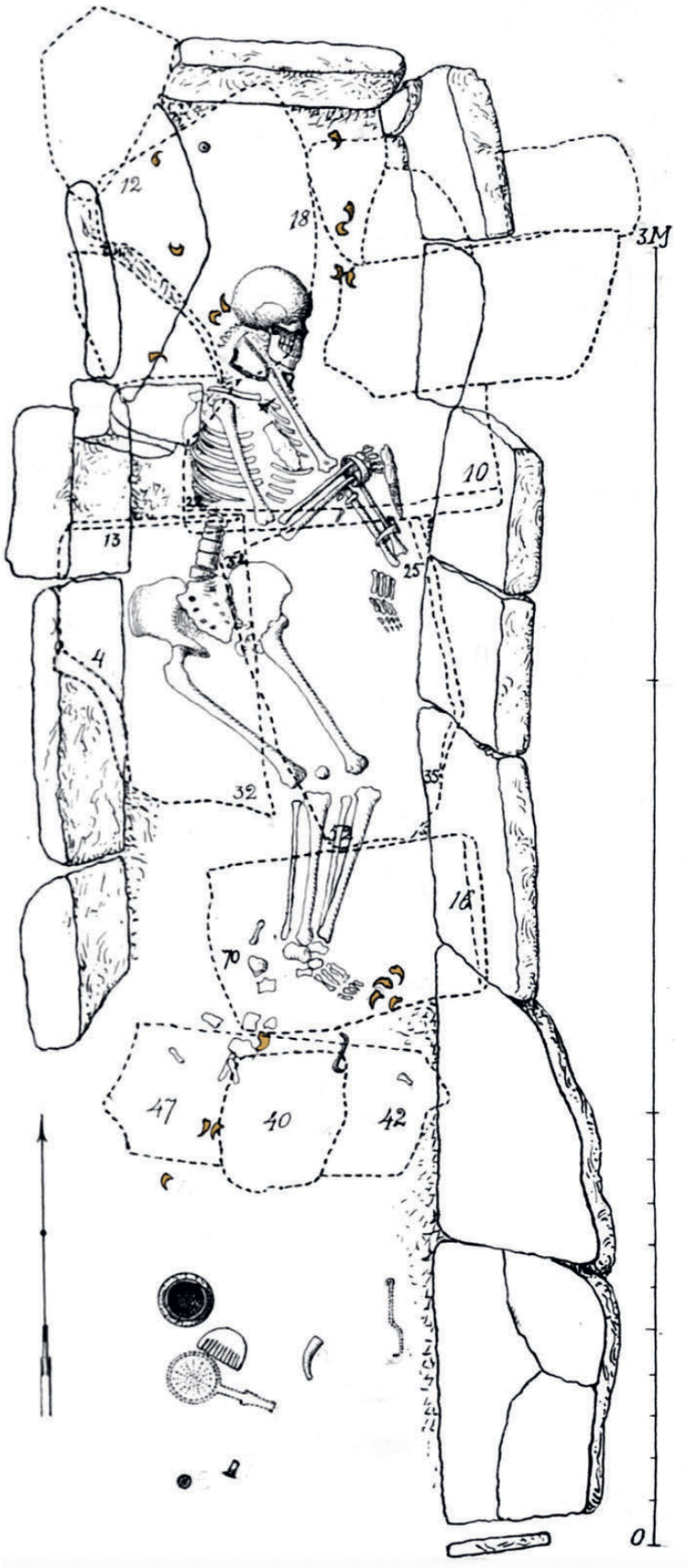


Fig. 6. Depiction of the grave from Smiss (160/180–325) in Eke parish (SHM 16113, ATA: 1875F; unknown artist; image modified, with bear claws highlighted in brown, by J. Jordahl).



Fig. 7. A bear claw from the bronze cauldron in grave 280D (550–750/800), Ihre Hellvi parish (SHM 20826, picture ID 224283; photo J. Ljungkvist).

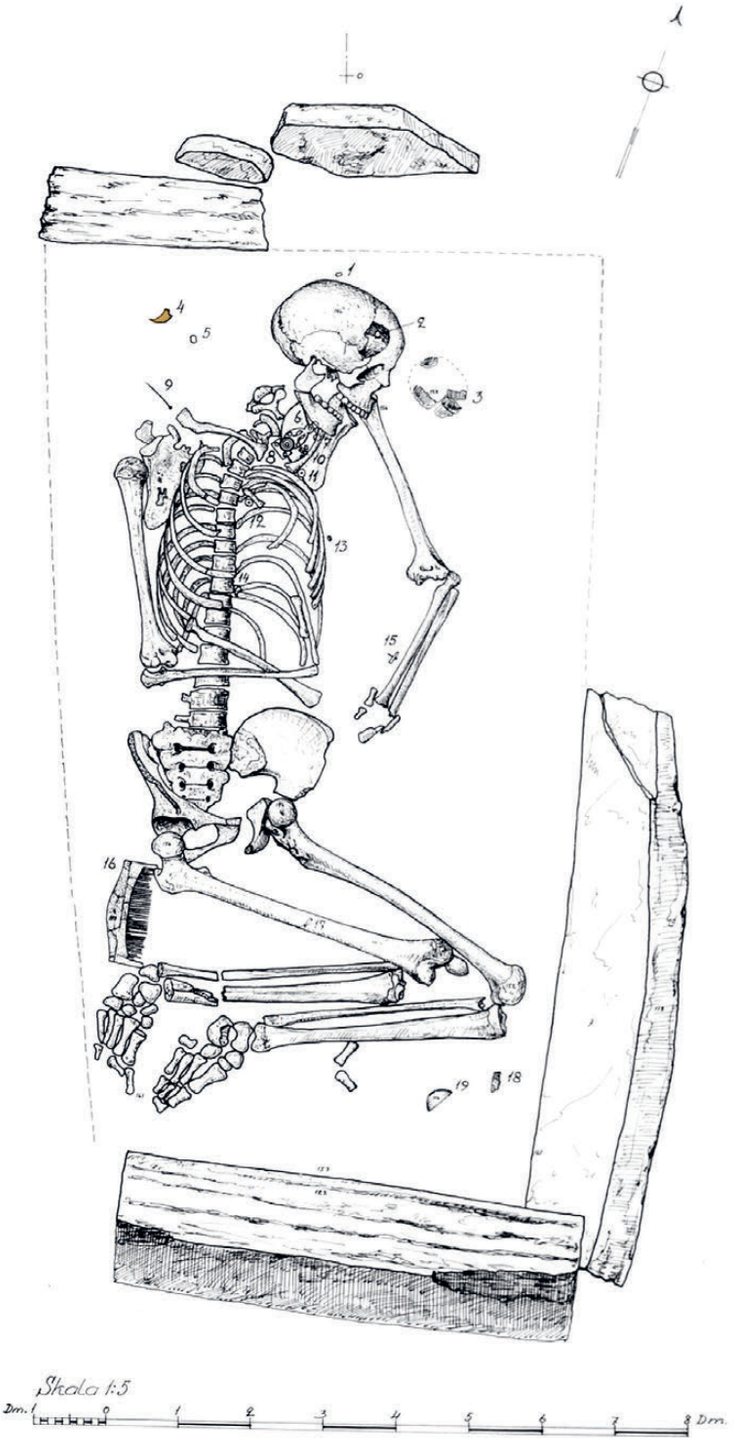


Fig. 8. Grave 3 in Allekvia (550–750/800) in Endre parish (SHM 24277:3, ATA: Go 1927F; unknown artist; image modified, with the bear claw highlighted in light brown [no. 4], by the left side of the cranium, by J. Jordahl).

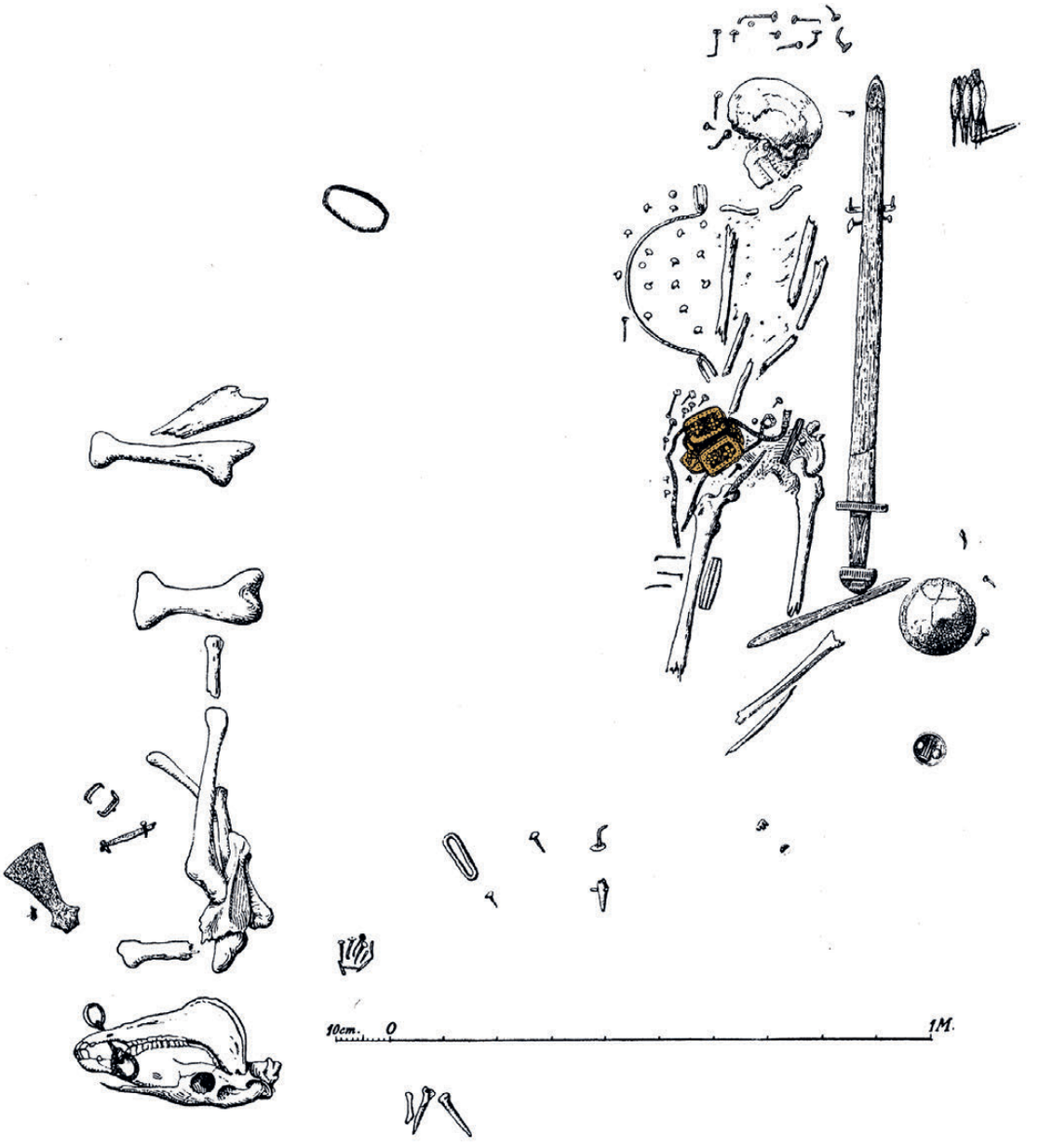


Fig. 9. A field drawing of grave IV in Rösta, Ås parish, in Jämtland, 10th century (unknown artist, image modified, with the bag at the waist highlighted, by J. Jordahl).



Fig. 10. Sami amulet in the shape of a partial bear paw with three claws, attached to belt straps (Nordiska Museet, ID: NM.0181624A-B, photo B. Wreting).

Table 1. Total number of graves on Gotland with bear claws associated with a specific period.

Period	**Total number of graves**
Pre-Roman Iron Age (PRIA)	2
500 BC – AD 1	
Roman Iron Age (RIA)	16
AD 1–400	
Migration Period (MP)	13
AD 400–560/570	
Migration Period – Vendel Period (MP – VET)	6
AD *c.* 400–750/800	
Vendel Period (VET)	36
AD 560/570–750/800	
Vendel Period – Viking Age (VET – VIT)	2
AD 560/570–1050/1100	
Viking Age (VIT)	7
AD 750/800–1050/1100	

Table 2. Number of graves containing bear claws according to funeral rites.

Funeral rites	**Total number of graves**
Cremation burial	94
Inhumation burial	40
Both cremation and inhumation burials	10

Claws in Late Iron Age graves (*c.* 550–1100 CE) and bones in a castle (post 1500) – *Ursus arctos* in the Åland archipelago

By Rudolf Gustavsson and John Ljungkvist

Keywords: Åland Islands, Late Iron Age, burials, bears, zooarchaeology

Abstract: Bears have never been a part of the fauna in the Åland Islands. Yet they are present in the archaeological record in a number of ways. Most finds of claws have come from 30 Late Iron Age (550–1100 CE) cremation burials. At least one so-called bear tooth pendant also shows a symbolic presence of bears in its shape. Another type of object that is characteristic of Åland burials and is perhaps also related to bears, is represented by the numerous clay paws. The pre-modern finds of bears on the archipelago are not limited to prehistoric grave finds. A few bear bones have also been found at the medieval castle of Kastelholm. This find reveals a way of using bears that is rather different from that seen in earlier burial contexts. Even if bears were not living on the archipelago, they are clearly present in the archaeological records through several centuries. The volume of the data is much smaller than in other areas around the Baltic, but it is enough to see that the Ålandic people chose a partially independent way of using bear products and bear symbolism.

Landscape, faunal history and local economy[1]

The landscape of the Åland Islands and southwestern Finnish archipelago differs considerably from the other large island landscapes of the Baltic (Fig. 1). Today, the islands and skerries number around 27,000 and their total landmass is around 1,553 km^2. The main island, or mainland Åland, covers an area of *c.* 1,000 km^2, the eastern archipelago an area of about 500 km^2 (ÅSUB 2019).

This is a landscape characterised by rocky, broken terrain with larger differences in elevation in the northern parts of the islands and flatter, sandy moraine landscapes in the southeastern parts. Between the rocky areas in the north are valleys and plains with sand and clay-based soils suitable for the growing of crops. Due to the ongoing land uplift, this is a constantly changing landscape. When the first settlers arrived in *c.* 5500 BCE, only a few rocky islands with a steep topography protruded from the sea (Núñez 1986; Jaatinen et al. 1989, 25–34). The calculated landmass at this point covered about 24 km^2, and in *c.* 1500 BCE the landmass had increased to some 500 km^2. By the end of the Iron Age, about 1100 CE, the landmass occupied some 970 km^2 of broken terrain. It had, in other words, grown considerably, but it was still too small to house a population of bears, especially alongside a growing human population.

1 In addition to the works mentioned in the bibliography, further sources from the archives of Ålands Museum have been used: Kastelholm castle excavations' catalogue of bones (Bnr catalog) and archaeological field documentation; Ålands Museum's catalog of archaeological finds.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 469–488 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134346

The early faunal history of the islands is still more or less unexplored. In archaeological assemblages from the Stone Age, *c.* 5500–1800 BCE, only a few fragments of terrestrial animals can be found among the numerous bones of marine mammals, fish, and seabirds. It has been estimated that the islands, at least theoretically, could have supported a local population of elk from *c.* 1800 BCE, but mountain hare is the only wild terrestrial mammal that is repeatedly identified in the assemblages from the Neolithic up to the Late Iron Age (Núñez 1986; Storå 2000). Analysed bone assemblages from the Bronze Age, 1800–500 BCE, and Early Iron Age, 500 BCE–550 CE, are limited, and only from the 5th century CE onwards do the finds get larger and the number of species increases, including occasional finds of roe deer (Larsson 1999; Andersson manuscript). The assemblages from the Late Iron Age consist almost exclusively of sheep, goat, cattle, and seals. Pigs are present in the Neolithic and in very limited quantities also during the Late Iron Age (Storå 2000; Gustavsson et al. 2014). They only start to appear frequently in medieval find layers. In short, this archipelago was not particularly suitable for large wild mammals.

Bears are noted as a missing species in the faunal historical literature from the 19th–20th centuries (Radloff 1795; Nordberg 1939a; b). According to Nordberg (1939a), both Tuneld (1741) and Bergstrand (1852) mention that bears were occasionally found in the Åland islands, but Radloff had already disputed this. In particular, the data on wild animal species published by Bergstrand have been considered dubious. Bergstrand has, for example, claimed that the arctic fox was present in the Åland Islands, something that has to be viewed as extremely unlikely. Eventually, populations of elk and roe deer established themselves on the archipelago, but they were hunted to extinction in the early modern period, the former in 1778 and the latter already in the early 16th century. Wild boars have never been part of the local fauna, but the Åland Islands apparently had a prosperous population of lynx, together with pine marten, fox, and wolf until the mid-19th century (Nordberg 1939a). One reason for this is that the animal populations on the Åland archipelago, in contrast to other Baltic islands like Gotland and Bornholm (see Jordahl et al., this volume), could have been supplemented by new animals from the Finnish mainland during wintertimes, over the frozen sea.

The economy of the islands was adapted to the local environment, and sediments suitable for crop farming are mostly found below 5 m above the present shoreline. Thus, this type of land was not available until historic times (post *c.* 1100 CE), and even in the 18th century the cultivated lands were only a third of today's (Jaatinen et al. 1989, 27). Subsistence was mainly based on livestock herding, fishing, fowling, and sealing for grey seal, ringed seal, harp seal and sometimes also harbour seal (Storå et al. 2012; Kivikero et al. 2020). The archipelago, with its unique landscape in constant change presented different conditions, especially for farming and crop growing, in comparison with other Baltic islands like Gotland, Öland, Dagö, or Ösel/Saaremaa. As an effect of these conditions, the marine economy, including seafaring and trade, became essential for the population of the islands.

The main basis for studies of contacts and trade in prehistoric Åland comes from the Late Iron Age burial mounds. It is a norm that these contain rivets that originated from boats. Other artefacts indicate close connections with the outside world, where especially Finnish, Swedish, Gotlandic, and Baltic objects are present in the burial assemblages (Kivikoski 1959; Gustavsson et al. 2014; Tomtlund 2014). Bear products, primarily furs, are another foreign product, indicating contacts, travel, and trade with the surrounding regions. For the Åland community, the role of bears clearly seems to have reached beyond the role of signalling status, power and wealth. The material also clearly indicates that bears had a broad presence in symbology and burial practices and therefore probably had a lively role in myth and folklore.

Burial contexts with bear finds

The known graves with bear claws originate from some of the *c.* 400 Late Iron Age cemeteries in the Åland Islands, which have a total of *c.* 10,400 visible mounds (Tomtlund 2014). They are far more common than Early Iron Age graves, which number some 2,200 cairns. However, some of the larger Bronze Age cairns are known to include several secondary burials dating up to the Migration Period. Only few excavations have been undertaken on this type of monument, and the find material is scarce, which might be one reason for the lack of bear bones from this period (Gustavsson 2008). Some 740 Late Iron Age burial mounds have been excavated since the creation of the Ålands Museum in the 1930s, and bones from 286 of these have been analysed by osteologists/zooarchaeologists. The burial composition and the construction of the individual monuments in the cemeteries highly resemble the middle Swedish cremation burial practice. But the composition of artefacts in the burials constitutes a mix of Finnish, Swedish, Gotlandic, and Baltic objects, with some local varieties (Kivikoski 1959; 1963; 1980; Rundkvist 2010; Gustavsson et al. 2014; Tomtlund 2014).

Five cemeteries have been completely excavated, and three of these have also been fully published: Kvarnbacken in Saltvik (Kivikoski 1963), Långängsbacken in Sund (Kivikoski 1980), and Bol in Finström (Landin/Rosborg 1984). All remaining excavations are only available as grey literature in the shape of reports, catalogues and analyses in the Ålands Museum archives.

The publications by Kivikoski (1959; 1963; 1980) form the basis for almost all studies of Late Iron Age burials on the archipelago. The sites are located relatively close to each other in the northeastern part of mainland Åland and can be characterised as relatively rich in contrast to the material from e.g. Bol in the middle of mainland Åland, which is much sparser. This inequality is interesting as it indicates certain differences between farms and communities on Åland, and perhaps even regional differences (cf. Tarsala 1998; Tomtlund 1999; Gustavsson et al. 2014). It is still uncertain if the examples given by Kivikoski represent the burial practice and social structure of Åland as a whole.

An osteological analysis of burials is only included in the publication of Bol in Finström (Landin/Rosborg 1984), whereas the remaining osteological studies are available in the form of unpublished theses and reports in the archives of the Ålands Museum (Vormisto 1981a; b; 1982; Landin 1982; [without year] a; b; Martinsson 1984b; c; 1986; Martinsson-Wallin 1986; Martinsson-Wallin/Wallin 1986; Wallin 1986; Aunér 2012; Gustavsson et al. 2014; Gustavsson 2015; Prata 2018; Ahlström-Arcini/Magnell [without year]).

Frequency and chronology

From the 286 osteologically analysed graves, bear claws or, more accurately, third phalanges, have been identified in 18, or 6.2 % (Fig. 2; Table 1). The number of individual claws in a single mound varies from one to 17 and adds up to a total of 119 individual claws. In addition to previously analysed materials, some cremated remains from mounds have been checked in the collections of the Ålands Museum. This rudimentary survey can in no way replace an osteological analysis, but it has resulted in another 12 burials with bear claws. One of the "new" sites is the cemetery of Knösbuskarna in Svartsmara, Finström. Here, a total of 20 mounds were excavated in the 1930s and 1940s, and bear claws were identified from three mounds (1, 26, 32), i. e. 15 %. The other nine graves with bear claws are scattered over mainland Åland and originate from archaeological investigations in which single mounds from cemeteries have been excavated to give way for other land use. The number of burials with bear claws thus adds up to at least 30, and they were found in at least 16 different cemeteries across mainland Åland. Systematic osteological analyses of bones in the museum collections, carried out in the future, will undoubtedly result in more finds.

The burials with bear claws have been dated using artefact typology, coins, horizontal stratigraphy on cemeteries, and, in only two cases, radiocarbon dating. For this compilation, a revised typological dating of the artefacts has also been made. However, in many cases it is only possible to relate the burials to the Late Iron Age (550–1100 CE).

At least 23 of the 30 burials can be dated to a specific chronological period or to an even more narrow timespan (Table 2). In comparison with studies of Swedish and Norwegian findings, it is surprising that not a single bear claw burial has been dated to the Early Iron Age (Petré 1980; Grimm 2013; Lindholm/Ljungkvist 2016). Further, only a probably female burial, in mound 6, from Mellangårds in Rangsby (Sa 23.7), and a male burial in Sålis (Sa 29.1) date to the Early/Mid-Merovingian Period (*c.* 550–700 CE). However, as many as 21 burials date to the Viking Age (800–1100 CE). Of the remaining undated burials with bear claws, two from Kvarnbacken in Saltvik (Sa 2.4) are located in a part of the cemetery with only Viking Age burials. They are therefore assumed to be of the same date, bringing the Viking Age bear claw burials to 23 (Wallin 1986; Gustavsson et al. 2014). Some of the mounds with bear claws contain very few objects, and it might be argued that these burials relate to the final part of the Viking Age, when Christian funerary customs started to influence the burial rites.

There also appears to be a substantial difference in how the Viking Age bear claw burials are dated within this period. Only mound 19 from Hästhägnan in Syllöda (Sa 28.6), also a probably female burial, dates to the 9th century, and, among the remainder, as many as 15 date to the 10th century. This pattern is highly interesting as it deviates considerably from the general pattern in mainland Sweden, Gotland, and Norway (see below). Burying bear claws in Ålandic graves was obviously a tradition that covered several centuries, but the intensity in one specific late phase is rather special from a Scandinavian point of view. The peak frequency of claws in burials appears 300–500 years later than on Gotland as well as in middle and northern Sweden and in Norway (see various articles, this volume).

Sex assessment

Conducting sex assessments of the cremated bone assemblages has only been possible in a few cases due to their highly fragmented state. In nine out of ten burials, the deceased has been interpreted as male, and one has been classified as a "probable female". This indicates a strong connection between bear claws and male burials. An assessment based on the artefacts gives a slightly different picture with seven female burials and an additional six males. In total, there are eight female and 15 male burials, in other words about one third women and two thirds men. Interestingly, two of the three oldest burials (see above) are those of women, which may point to a stronger dominance of male graves later in the Viking Age.

Bear claws in a material context

As mentioned previously, the chronology of the Ålandic burials that include bear claws differs from the general pattern in Scandinavia. As the material is based upon only 30 burials, it is difficult to make any reliable interpretations about burial practice and bear claws. The fact that all burials are cremations means that many of the artefacts are fragmented or in other ways damaged, not only from the cremation, but also from post-cremation burial practices as well as from later land use.

Bear claws have been found with some rare objects primarily among the dominating 10th-century burials (see above). The finds include coins, weights, dress ornaments, weaponry, and beads. Among a total of 113 burial mounds from Långängsbacken, four weights were found in three different burials (39, 43, 78), all of which have also yielded claws. Mound 78 also contained one out of two Arabic silver

coins recorded from the burial ground. At Knösbuskarna, mound 32 contained two Arabic coins, minted around 900 and 920 CE, respectively, out of a total of four from the cemetery (Dreijer 1945). Out of 140 burials at Kvarnbacken, a single possible weight was found in mound 80, together with bear claws and the tip of a sword. Another four burials in this study contain objects relating to a warlike sphere. Shield rim mounts were found in Kvarnbacken 94, a complete shield boss in Godby 1, a spearhead in mound 42 at Långängsbacken, and a scabbard chape in mound 78.

Small whetstones with a hole for suspension were found in four mounds. Three stones, from Strömshagen, Finström (Fi 20.2), and Ödkarby, Saltvik (Sa 35.6), are made of banded slate with cross sections of 12 x 15 and 12 x 12 mm, respectively. Some whetstones of this type have been interpreted as functioning as touchstones for testing the quality of precious metals, as streaks of metals have been found on the surface (Ježek 2013). It should also be emphasised that the deposition of this type of stone is a phenomenon that is typical for the 10th century, which is when we also have the most graves with bear claws on Åland.

A characteristic type of object with eastern provenance, or rather a sign of eastern influence in the male dress fashion, is represented by buttons used for either caftans or purses. These have been found in five mounds with bear claws, and they represent all known bronze buttons of the type found on the Åland islands. This garment has links to the fashionable dress style of the Byzantine empire during the 10th century (Kivikoski 1980, 32; Hedenstierna-Jonson/Holmquist-Olausson 2006; Androshchuk 2013, 220).

That several bear claw burials contain grave goods in the shape of silver coins, weights, caftan buttons, and faceted beads made from carnelian rock not only indicates trade, but also suggests contacts with regions in the east, together with an Ålandic participation in the same networks as neighbouring regions (see below). In addition, there are so far no existing holistic studies on social structures on Viking Age Åland, but the find combinations mentioned above also indicate some relation between bear claws and, from a material sense, leading persons in households or communities, irrespective of gender.

Many of the Ålandic burials have, as mentioned above, a fragmentary content that is largely a consequence of the cremation burial rite. Despite this, it is possible to see strong parallels to late burials at Birka, such as graves 581, 644, or 944, and other rich burials containing weaponry and foreign imports/influences in the Mälaren region, such as Valsgärde 12 and 15, and Vendel IX (Stolpe/Arne 1912; Arbman 1940; Schönbäck/Thunmark-Nylén 2002). These 10th-century burials contain a typical assemblage of objects consisting of, for example, full sets of weapons, including the characteristic 10th-century battle knives and axes, the slate whetstones with holes for suspension, and the dress accessories that relate to areas further to the east in the shape of the caftan buttons, purses, and silk objects. In addition to the eastern connections, there are also other Ålandic objects with close parallels to the Birka material. One peculiar find is a pair of very unusual bronze hooks (for garters) found in grave Birka 905, with almost exact parallels in mound 78 at Långängsbacken (Kivikoski 1980, pl. 11).

The female burials on Åland are not characterised by the same varied composition of finds with eastern connections as their middle Swedish counterparts. But at least two of them contain the characteristic mid-10th-century sets of carnelian and rock crystal beads, frequently found in contemporary middle Swedish burials. There is strong evidence that the Ålanders participated in a broad material symbolic language, but the bear claws from the 10th century indicate an Ålandic narrative in which bears appear more frequently in comparison with Birka. From the more than 1,000 excavated burials on Björkö Island, bear claws have only been recorded in six graves according to the Swedish History Museum's digital bone catalogue. This means less than 1 % of the excavated graves from the island. All these burials are cremations, of which three can be securely dated to the 10th century (graves 93, 148, 676). For source-critical reasons, e.g. the few osteologically analysed cremation assemblages and

the often poor preservation of inhumations, more bear claws may be hidden among the cremated bones in the collection. But the number of burials with bear claws from Birka is not assumed to be substantially larger. In comparison, it seems that the bear, represented by the claws, was present in a far stronger way on Åland during the 10th century.

Most of the bear claws in this study are assumed to represent bear hides cremated with the deceased on the pyre. In addition to the claws, a bear tooth pendant in bronze (Åm 10:87) of Finnish type has been found in mound 7 at the Sjöhagen cemetery in Hammarland (Ha 22.11), a place where mound 3 also includes bear claws. In mound 7, a number of beads of different types, including faceted carnelian ones, as well as a bronze chain classified as a Swedish type were also found. The beads date the burial to the Late Viking Age. The bear tooth pendant can be assumed to have a different symbolic meaning than the furs on the pyre; as a pendant, it was intended to be worn and to communicate something about the wearer within its society (Asplund 2005; Kivisalo 2008). In recent times, the link between bronze pendants and bear claws has been strongly disputed (see Mannermaa et al., this volume). Whatever link these pendants had to bears, we can conclude that the evidential value is stronger for the actual bear claws.

Bear tooth pendants from the Finnish mainland are more often found to be made of bronze instead of actual bear teeth (cf. Mannermaa et al., this volume). Pendants are exclusively known from female burials dating from the Viking Age and up to the late 12th century (Asplund 2005; Kivisalo 2008, 264). A future osteological analysis of the Hammarland burial may shed light on whether this is true for the Åland Islands as well. The number and types of beads from mound 7 suggest the burial is that of a female, and the lack of beads in mound 3 might indicate a male burial, even if this method does not replace an osteological analysis.

Differences between Åland and the eastern and western mainlands

For comparison with the situation in the west, a study of cremation burials in the Stockholm area can be used (Sigvallius 1994). In this study, based on 488 cremation burials, bears are represented in 29 graves, or 5.9 % of the total (Sigvallius 1994, 74), a frequency close to the situation on the Åland Islands. The chronology, however, differs in comparison to eastern Middle Sweden, where bear claws turn up primarily in the Migration and Early Merovingian Periods, becoming less common during the 8th century and onwards (Sigvallius 1994, 74, 147; Lindholm/Ljungkvist 2016). As shown above, the claws turn up primarily in Late Viking Age burials on Åland. The sex distribution in the Ålandic burials that include bear claws is strongly linked to men, which also differs from Sigvallius' Middle Swedish material, where 14 sex-assessed burials are distributed between six men and eight women (Sigvallius 1994, 75).

In Finland, chronology, frequency and sex distribution are more difficult to determine, as most of the bear claws originate from collective so-called "cremation cemeteries under level ground", which were in use mainly from *c.* 600–1000 CE (Mannermaa et al., this volume). In these cemeteries, the individual burials are very difficult, if not impossible, to identify. Two ^{14}C-datings of bear claws from such cemeteries have given results pointing to the Migration Period and the Viking Age, respectively (Kirkinen 2017; Mäntylä-Asplund/Storå 2010), which only shows that bear hides were included in the funerals throughout the time period.

A medieval dancing bear and other finds

As mentioned at the beginning of this paper, the evidence of bears is not exclusively related to Late Iron Age burials but also to Kastelholm, the only medieval castle on the Åland archipelago (Table 3). The construction date of the castle has been debated through the years and has been set between the 12th to 15th centuries. It most likely existed in the later part of the 14th century, as it is mentioned in the will of Bo Johansson Grip in 1388. The castle was in use until the end of the 18th century, when fires left it in ruins and most of the administration was moved to Turku (cf. Carlsson 1993; Kivikero 2020).

Excavations have been carried out since the late 19th century and, all in all, over five tons of animal bones have been collected, though only a small portion has so far been analysed (Kivikero 2020, 25–26). During the 1980s and 1990s, archaeologist and osteologist Ronnie Carlsson supervised the packing and cataloguing of the bones from the excavations. Lists of observed species in each context were noted, and general comments were attached to these lists. The lists are to be considered as indicative only and do not replace a full osteological analysis, nor can it be assumed that each individual bag has been carefully checked. However, six bear bones are noted in the lists.

The identified bear bones include four claws, a single tooth, and a mandible. The single tooth was found together with one of the claws. Three of the four claws probably represent furs, while the fourth has a drilled hole and was probably worn as a pendant. The latter find is a relatively large claw from the front limb, probably a personal object that could, for example, represent the memory of a bear hunt or be an object of folk religion.

The mandible is perhaps the most interesting specimen of them all (Fig. 3). It is a right-hand mandible with the canine and second molar still in place and some severe pathological features. At some point it was broken between molars 1 and 2; it has healed in a slightly bent shape. On the buccal side of the mandible, an 8 x 5 mm cloaca drained the infected bone; it is connected to a 5 x 2 mm opening just behind the alveola of the posterior root of the first molar. The alveola has some build-up of secondary bony tissue, but the tooth seems to have been lost post mortem, as is the case for all the other missing teeth.

The second molar is only worn through the enamel to the dentine at a 1 x 1 mm patch on the anterior lingual cusp, and the apical aperture of the canine is wide open. This individual was young, less than six years of age (Guskov 2014), but can still be considered as fully grown. The canine shows an enamel hypoplasia 18 mm below the tip that can perhaps be related to the stress caused by the breaking of the mandible. The canine grows from *c.* 8 to 20 mm in the second year of life (Zavatsky 1976), and the trauma may have occurred in the second autumn or winter. Some thin cut-marks below the alveolae of the premolars indicate that the individual was skinned.

The DNA of the bear mandible has been analysed by Erik Ersmark from the Museum of Natural History in Stockholm, and this individual is from the same population as a Finnish bear from the 19th century in the collections of the same museum. The genome differs from the northern Swedish bear population from that time (pers. comm. E. Ersmark, May 2020). The genetics might probably also indicate a Russian origin.

All Kastelholm bear bones date to the timespan 1550–1700 CE. By this time wild animals, mainly deer, were kept in the vicinity of the castle in a kind of a simple menagerie, and the whole of Åland was declared royal hunting grounds. A number of reindeer from Norrland, Sweden, was also kept at the menagerie but did not reproduce at the site (Storå 2009, 117). In this period, court life at the castle reached its most extravagant phase, and a dancing bear or just a living bear used for showing off would fit this setting. The bear with the broken jaw may have been captured during its second winter, injuring the jaw in the process, and kept in captivity until reaching sexual maturity at five to six years of age. The infection of the mandible would have caused a bad temper, and with growing strength

the individual would have been harder to contain and control, something that might have led to its ultimate death.

The other bear bones from the castle probably represent a continuation of the Late Iron Age fur trade, which was in some degree coordinated from the castle. The written records tell us about lynx and seal hunters, employed to conduct local hunting on Åland (Nordberg 1939a; Kivikero 2020, 72), but the bear hides come from areas beyond the islands. The court bear suggests that the catchment area in this case was Finland.

Clay paws

Beyond the actual remains of bears, there is a characteristic and peculiar type of artefact from the Åland Islands in the shape of the so-called clay paws (Fig. 4). These items, made of untempered clay, are found only in cremation burials, where they were probably fired on the cremation pyre. A few paws have been estimated to have been fired twice (Kivikoski 1980, 34). These objects show great individual differences, yet are an unmistakable type of artefact, ranging in size from a few centimeters up to *c.* 13 cm in length.

The clay paws are found in cremation burials that range in date from the 7th century up until the transition to Christianity, which ended the practice of cremation. According to Ilves (2019, tab. 2), clay paws have been found in 113 of 952 excavated mounds on the islands. The quantification of excavated mounds prior to the creation of the Ålands Museum in the 1930s is, however, complicated for a number of reasons, such as lack of preserved documentation from the 19th century. The Ålandic clay paws have an almost identical equivalent in the Jaroslavl' area in present-day Russia, dating from the 9th to 11th centuries. In this area, the practice was also abandoned during the transition to Christianity. Such objects are missing from mainland Finland and Sweden; only one specimen has been found in Södermanland (Callmer 1994; Ilves 2019).

Over the years, the clay paws have primarily been related to either bear or beaver. Alternative species, such as humans and dogs, have been suggested but not been given wider acceptance. Both beaver and bear are missing from the faunal history of the Åland Islands, but bear is much more strongly represented in Germanic, Finno-Karelian, and Sami mythology than the beaver, which generally is of marginal importance (Frog 2014, 385–395). Seals – as a source of hides, food, and seal oil – have been of great importance to the Ålandic economy from the Mesolithic to the 20th century, and they have been proposed as an alternative to bear or beaver (Gottberg 2018; Ilves 2019). For more on clay paws, see Callmer (1994), Tarsala (1998), Frog (2014), and, most recently, Ilves (2019).

A highly relevant question is, of course, whether there is a connection between clay paws and bear claws in burials. Of the 30 graves with bear claws in this study, clay paws are included in five, and a possible fragment has been found in yet another. There is, in other words, no obvious connection. Based on the burials in Långängsbacken and Kvarnbacken, it has previously been stated that clay paws and bear claws are not present in the same burials (Gustavsson et al. 2014, 181). But this study, which covers a bigger sample from a larger geographical setting, shows that this is not the case. Callmer (1994) has noted that the cemetery of Knösbuskarna in Svartsmara, Finström, has a high proportion of clay paws. The same cemetery, as noted above, also has a high proportion of bear claws. Two of the three burials with bear claws also contain clay paws.

The clay paws, and other objects in several of the burials with bear claws, have parallels in the Magyar/Meryan area in central Russia, where sites with clay paws, such as Petroskoe in the Jaroslavl' area, reveal strong Scandinavian connections in the Viking Age (Callmer 1994, 32–39). This is an area with Fenno-Ugric speaking populations, whose contacts with regions in Finland can be traced back hundreds of years before the Viking Age, for example in the shape of the Permian/Nevolino belts

(Goldina/Goldina 2018). These people had direct access to vast hunting grounds for various fur bearing animals. In Fennoscandia, bears have a greater magic aura than most animals. The ritualised performance of *karhunpeijaiset* (bear wakes) in order to reincarnate the killed bear was performed until at least the 17th century among the Finns (Sarmela/Poom 1982). Part of that magic and the idea of reincarnation was perhaps transferred into a representation in clay. Wolves, ravens, and eagles played a major role in old Norse mythology and poetry, in contrast to bears (cf. Sundqvist, this volume), although the latter and lynx are represented in the form of claws or furs. Bears may not be frequently represented in battle descriptions among the scavengers of corpses (Jesch 2002) or in the iconography of Scandinavia as a whole, but, on the other hand, it is interesting to explore their role later on, especially on Åland and in Middle Sweden which, culturally and geographically, were positioned closer to both the Sami and Karelo-Finnish spheres. It is also primarily in the middle Swedish and Finnish regions that we find depictions of bears on spear sockets, sword pommels, and belt mounts (see Oehrl, this volume; Lamm/Rundkvist 2005). In other words, regional religious traits of this area did not perhaps leave such a large imprint on the old Norse literature as did those of the southern and western Scandinavian regions. Åland is right in the middle of the area, and is a meeting point between the Finnish and Scandinavian traditions. It is impossible to decide, based on morphology, which particular species the clay paws represent, but the bear is a good candidate.

Conclusion

The remains of bears on the Åland Islands can be interpreted in different ways. Were the Ålanders themselves engaged in bear hunting expeditions in areas away from the islands to acquire furs, or were they involved in the trade as middlemen? From medieval sources we know that the Ålanders bought goods elsewhere to sell them in other markets, and also transported and sold goods for third parties (Friberg 1983, 70–71; Sandström 1990). The Åland Islands' subsistence is, to some extent, dependent on the trade in foodstuffs to diversify the mainly marine resources. This form of trade is in itself often not lucrative, but more of a zero-sum economy. Several of the burials that include bear claws also contain artefacts which point to contacts with areas further to the east, and some also contain weaponry. Weapons and bear hides are often associated with the berserks of the Norse saga literature, although both may on their own represent wealth and not necessarily indicate a warrior elite (see various contributions, this volume). The clay paws and other foreign objects connected Åland with different regions that were hunting grounds for a variety of fur-bearing animals, meaning that the Ålanders had contacts with several regions that held bear populations, or had close contacts with such areas. These included present-day Sweden, Finland, Russia, and the Baltic countries. The chronology of burials with bear claws on the Åland Islands differs from the general pattern on the Swedish mainland and Gotland, and they may represent a partially different network. The bear hides from the islands' Late Viking Age are part of a package of eastern objects and clothing that appear to represent a special group with regular interaction with people living along the eastern European rivers.

There are indications that bear symbolism is more strongly represented in certain cemeteries or local communities on the archipelago, such as at Knösbuskarna in Svartsmara, Finström, or at Sjöhagen in Hammarland. In the latter case, a bear hide and a bear tooth pendant were found in two adjacent burials, those of a man and a woman, respectively.

The medieval bear bones at Kastelholm also indicate that the region continued to be involved in fur-trading and -handling after the Iron Age. The findings of bear claws indicate the importation of furs, and the court, which was one of the northernmost in Europe, may also have been entertained by one of the dancing bears known from other late medieval and Renaissance courts on the European

continent. The bear from Kastelholm has its origin on the Finnish mainland, an area where hunting for furs has been of great importance to the local economy.

Although the archipelago has never been inhabited by bears, this creature still played a significant role in the material culture. As Frog (2014) and Kirkinen (2017) have discussed, the bear cult is of a different nature in the Germanic versus the Sami and Fenno-Karelian areas, and Åland is an interesting meeting point between these cultural spheres (cf. also various contributions, this volume). The material culture on the Åland Islands is characterised by a strong mix of artefact types and shapes, into which the islanders selectively incorporated parts from mostly mainland Finland and Sweden, but also areas further away. Few communities in the Baltic area have chosen to mix their material culture from so many diverse areas as the Ålandic, and, if the material culture is a reflection of oral stories, religion and myths, these islands had a very interesting culture indeed, which probably appeared both familiar and confusing to visitors from the eastern and western mainlands. For an area without bears, the animal is exceptionally well represented in the material culture. Perhaps the lack of living bears has only added to their mythical value.

Acknowledgements

Rudolf Gustavsson's work was funded by Societas Archaeologica Upsaliensis' forskningsfond, and John Ljungkvist's work on this paper was undertaken within "The Viking Phenomenon" project at Uppsala University, funded by the Swedish Research Council (grant 2015-00466).

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Fig. 1. The Åland Islands in the Baltic region (map GIS department, ZBSA).

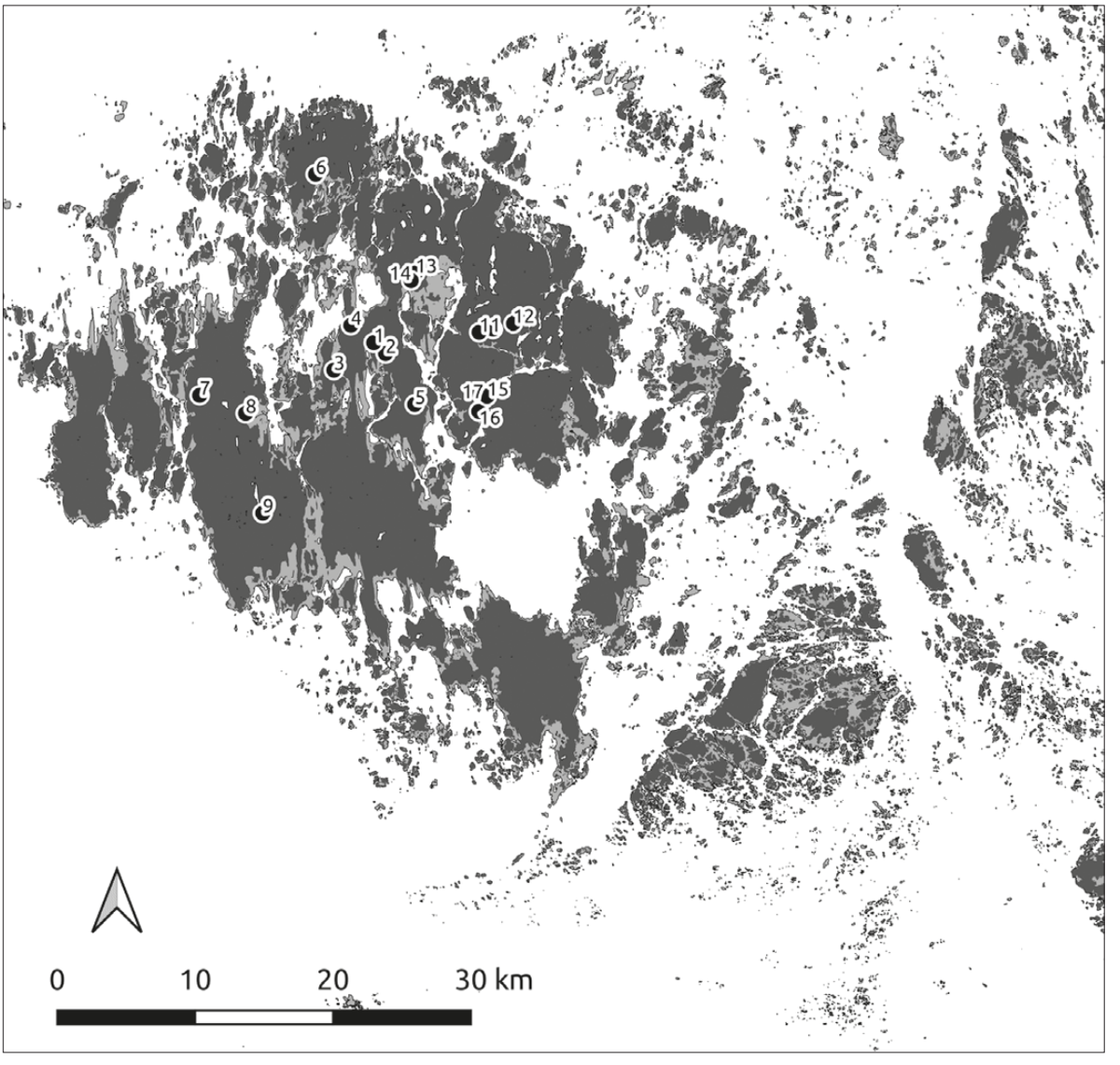


Fig. 2. Sites with burials including bear bones. Land shaded in light grey emerged only after c. *1000. Numbers refer to Table 1 (map R. Gustavsson, using elevation data from the National Land Survey of Finland Topographic Database 9/2016).*



Fig. 3. Bear mandible from the late 16th century. Kastelholm on Åland. Find no. KS33: Bnr 398 in Ålands Museum (photo R. Gustavsson).



Fig. 4. Example of an intact clay paw from the Åland Islands. This paw, find no. ÅM233:2, was discovered in the archaeological excavation of burial mound no. 5 in Tjudnäs, Kastelholm, in 1952; it is dated to the 5th century (Dreijer 1953; photo A. Mendes, Ålands Museum).

Table 1. Burials with bear claws in this study. Map numbers refer to Fig. 2. Sex assessment in parenthesis is based on artefacts. Dates are based on a revised typological dating for this study except for: [1] – based on horizontal stratigraphy (Dreijer 1945), [2] – coins, terminus post quem 920 CE (Dreijer 1945), [3] – ^{14}C-dated, laboratory ID Ua-62161 (Schröder 2016), [4] – ^{14}C-dated, laboratory ID Ua-60672 (Ilves 2019).

Map	Site	Name	Mound	Date	Sex	Clay paw	Find catalog	Report	Osteology
1	Fi 13.1	Östra riåkersbacken	23	900–1000			ÅM 58	Ramsdahl 1937	–
2	Fi 13.3	Kyrkbol	36	–	(F)		ÅM 169	Dreijer 1948	–
3	Fi 18.1	Knösbuskarna	1	900–1000	(F)	x	ÅM 71	Dreijer 1937	–
		Knösbuskarna	26	*c.* 1000[1]	(?)		ÅM 50	Dreijer 1935	–
		Knösbuskarna	32	920–1000[2]	(M?)	x	ÅM 45	Dreijer 1936	–
4	Fi 20.2	Strömhagen	2	550–1100	(M)	x	ÅM 306	Dreijer 1957	–
5	Fi 8.4	Godby	1	900–950	M	?	ÅM 586	Martinsson-Wallin 1986	Martinsson-Wallin 1986
6	Ge 15.4	Geta	2	990–1025[3]	?		ÅM 775	Schröder 2016	Prata 2018
7	Ha 15.1	Hemängen	4	500–1100	(?)		ÅM 40	Kivikoski 1934	–
8	Ha 17.3	Söderåkersbacken	34	900–1100	(?)		ÅM 125	af Hellström 1945	–
9	Ha 22.11	Sjöhagen	3	800–1100	(M?)		ÅM 10	Kivikoski 1933	–
		Sjöhagen	7	900–950?	(F)		ÅM 10		
10	Sa 2.4	Kvarnbacken	80	800–1100	(M)		ÅM 337	Kivikoski 1963	Wallin 1986
		Kvarnbacken	94	800–1100	(M)		ÅM 345		
		Kvarnbacken	97	900–950	(F?)		ÅM 345		
		Kvarnbacken	136	500–1100	(?)		ÅM 188		
		Kvarnbacken	139	500–1100	(?)		ÅM 345		
11	Sa 23.7	Mellangårds	6	550–700	(F)		ÅM 187	Dreijer 1951	–
12	Sa 28.6	Hästhägnan	19	800–850	(F)	x	ÅM 604	Rosborg 1987	–
13	Sa 29.1	Sålis	5	640–720[4]	M	x	ÅM 560	Martinsson 1984a	Martinsson 1984b
14	Sa 35.6	Ödkarby	16	900–1000	(M?)		ÅM 396	Dreijer 1966	–
15	Su 12.14	Stenhagen	5	–	M		ÅM 356	Kivikoski 1962	Vormisto 1981a

Cont. Tab. 1. ▶

Cont. Tab. 1.

Map	Site	Name	Mound	Date	Sex	Clay paw	Find catalog	Report	Osteology
16	Su 12.7	Långängsbacken	11	550–1100	M		ÅM 362	Kivikoski 1980	Landin 1982
		Långängsbacken	19	900–950	(F)		ÅM 367		
		Långängsbacken	38	900–1000	F?		ÅM 406		
		Långängsbacken	39	800–1100	M		ÅM 404		
		Långängsbacken	42	900–1000	M		ÅM 376		
		Långängsbacken	43	900–1000	M?		ÅM 404		
		Långängsbacken	44	950–1000	M		ÅM 376		
		Långängsbacken	52	800–1100	(F)		ÅM 376		
		Långängsbacken	78	950–1000	M		ÅM 386		

Table 2. Chronology of burials with bear claws.

Phase	Number of burials
Late Iron Age (550–1100)	7
550–700	2
800–1100	5
800–850	1
900–1000	15
Total	**30**

Table 3. Bear bones from Kastelholm on Åland.

Excavation	Find no.	Grid	Element	Date	Report
KS 5	Bnr 423	AB4, +5,72	Phalanx 3	KS 5, phase VII: 1550–1600	Carlsson 1988
KS 5	Bnr 127	C5, +5,61	Phalanx 3 and tooth	KS 5, phase VIII: 17th century	Carlsson 1988
KS 33	Bnr 398	D2, Pl. 5	Mandibula, dexter	KS 33, phase VIb: 1550–1600	Carlsson 1991
KS 42	Bnr 39	K16, Pl. 2, layer VIII	Phalanx 3 with drilled hole	KS 42, phase 2, demolition layer: 17th century	Åqvist 1991
KS 47	Bnr 66	M10, Pl. 3, layer S6/S8	Phalanx 3	KS 47, phase XVII: late 17th century	Karivieri 1991

The power of the paw. Multi-species perspectives on the bear claw burial tradition in a long-time perspective in South Norway

By Anja Mansrud

Keywords: Bear lore, cremation, bear claws, transhumance, protection, amulet, Early Iron Age Norway

Abstract: This chapter explores the issue of object and animal agency through a contextual analysis of bear claws in Iron Age cremations in South Norway (Sør-Norge). Bear claws were identified in 130 cremations, mainly dated within the Roman and Migration periods (1–550 CE). The presence of bear claws is independent of economic status, age, or gender. They occur in male, female, and mixed cremations, occasionally also with children. Most burials contain only one claw. Rather than representing chiefs, shamans, or warriors as previously assumed, the archaeological evidence suggests that individuals cremated with bear claws were also farmers, herders, and hunters. Drawing on Norwegian folklore and a multi-species perspective, I employ a retrospective approach and investigate relations between humans, livestock and bears in the context of hunting and transhumance, arguing that bear claws were powerful agents, utilised for ritual and safeguarding purposes.

Introduction

*People are not to do things with stones or fill them with magic power with the idea of tying them on people or on people's cattle. If a man puts trust in stones for his own health or that of cattle, the penalty is lesser outlawry (*Grágás, 39[1]*).*

Do objects have agency? The present chapter aims to explore the issue of object and animal agency through a contextual analysis of bear claws deposited in Iron Age cremations in South Norway.[2] Burials with bear remains have puzzled archaeologists for more than a hundred years (cf. Shetelig 1912, 112, 144–147; Møhl 1977; Petré 1980; Ström 1980; Krüger 1988; Schönfelder 1994; 2011, 95; Mansrud 2004a; b; Frederiksen 2006; Wamers 2009; Grimm 2013; Oehrl 2013; Klokkervoll 2015; Skogstrand 2016; Kirkinen 2017). Early finds of preserved bear skin and pelt in richly furnished Migration-period inhumations in Norway indicated that bodies had been laid to rest on top of bear skins (Shetelig 1912, 112, 144–147; Petersen 1940). Since bear claws are rarely perfo-

1 Translation after Dennis et al. 2006, 39.

2 South Norway refers to the whole of Norway south of Nordland. Southeastern Norway encompasses the counties of Viken, Oslo, Telemark & Vestfold, and Innlandet. Southern Norway (Sørlandet) encompasses the county of Agder, and Western Norway includes the county of Vestland.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 489–532 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134347

rated, they are commonly assumed to represent phalanges originally attached to skins, which were cremated and deposited along with the human remains (Lindholm/Ljungkvist 2016). Shamanism, closely linked with an animistic worldview, has been the main frame of reference for interpreting the status of the bear in pre-Christian ritual practice and ontology. Several studies have focused on the role of the bear in mortuary rituals and the construction of the identity of the deceased as a warrior, shaman, or noble bear-hunter (Frederiksen 2006, 278–279; Oehrl 2013; Kirkinen 2017). Burials with bear hides and claws have also been linked with the deity Odin, who could change his appearance into that of an animal, and the berserks, warriors who allegedly fought in the guise of bears (Ström 1980; Krüger 1988; Nockert 1991; 2011, 95; Price 2002; Wamers 2009). This chapter argues that the often-repeated association between bears, warriors, and shamans, set within the economic and symbolic expressions of the social and military elites, is at odds with the archaeological evidence. Bear claws have been identified in male, female, and mixed cremations of diverse economic status, occasionally even with children, and only a small fraction of the burials contain weapons.

Basic to the argument advanced here is that prehistoric perceptions of bears and their materiality were shaped by practical experiences with bears, in the context of farming, hunting and transhumance. Throughout northern Scandinavia, burials with bear remains reach a peak in the late Roman/Migration period, indicating a substantial bear population (Lindholm/Ljungkvist 2016). Around the same time, the shieling tradition, based on alternating use of in-field areas with permanent farms and livestock herding in the outfields in the summer, was established in South Norway (Magnus 1986, 49; Bjørgo 2005; Skrede 2005; Pilø et al. 2020). Outdoor grazing in the summer made livestock particularly vulnerable to predating bears. In archaeology, multi-species perspectives have been employed to study different types of human-animal relationships such as domestication, mutual engagements between herders and animals, and how foragers interact with prey as persons (Orton 2010; Hill 2011; 2013; Overton/Hamilakis 2013; Armstrong Oma 2018). The intertwined and emotionally complex relationship between humans, livestock and predators remains unexplored in archaeology, but has been closely examined in Scandinavian folklore studies (Solheim 1952; Edsman 1956; 1994; Pentikäinen 2007). It is here suggested that folk traditions are useful sources for approaching human-bear relations in the Iron Age (cf. Goldhahn 2018; Herva/Lahelma 2019; Lahelma 2019; Østigård/Kaliff 2020). Folk belief constitutes a tradition in which ritual practices are closely connected to daily work mode, maintenance activities and general life conduct (Solheim 1952). Folklore studies are concerned with vernacular beliefs and practices rather than elites and organised religion, focusing on persisting traditions and their transmission. As captured in the introductory quote, faith in the agentive power of objects is a central feature of vernacular beliefs (Steinsland/Sørensen 1990, 21; Mauss 2001; Alver 2008; Hedeager 2011; Røthe 2020). I propose that a retrospective use of vernacular bear lore can productively be used for exploring the traditions and practices of farmers, herders, and hunters in the Iron Age. Such a retrospective approach aims ideally to identify a link or continuity between earlier and later cases. In present day South Norway, the brown bear (*Ursus arctos*) is currently on the verge of extinction, but prior to the introduction of modern guns, around 1850, the bear population was extensive (Hodne 1997, 121). The region of Vestland was also haunted by bears in historical periods – in Ulvik (Hardanger) alone, 12 bears were shot during the period 1796–1805. Bear place names, bear legends and ritual practices involving bear remains are also extensively documented (Reichborn-Kjennerud 1947, 128; Nordland 1958, 133; Hodne 1997, 121–136; cf. Særheim, this volume). Hence, for this region, the vernacular narrative traditions and practices documented in the 19th–20th centuries make up a relevant framework for exploring the relationship between humans and bears in prehistoric periods.

Perspectives inspired by the ontological turn have also reinvigorated the archaeological discourse on materiality and opened new perspectives for approaching objects made from animal remains (Conneller 2011). Notions of animal and object agency, framed within a multi-species perspective, per-

mit novel lines of inquiry into the ontological status of bears and their materiality and offer an alternative framework for exploring the role and meaning of bear claws as potent artefacts in everyday life. Combining these approaches enables a step away from the purely symbolic approaches towards investigating human-bear relations in a broader frame of domestic life, lived experience and interspecies engagement (Armstrong Oma 2018; Birch 2018).

The bear claw burial tradition in South Norway: A contextual re-assessment

Bear claw burials occur all over South Norway, and this chapter deals with finds from the southern, southeastern, and western regions. Bear claws have been identified in 130 cremations within this district (Figs. 1–2; Appendices 1–2) and eight inhumations (see Grimm 2013, 279; Shetelig 1912, 73, 112, 143–144).[3] Bear skins or pelts are probably underrepresented, since unburnt organic remains are rarely preserved.[4] The burials are concentrated in the western and southern regions (Figs. 1–2). Of the 124 dated finds, two belong to the pre-Roman Iron Age (500 BCE – 1 CE), three to the late Iron Age (Merovingian period, 570–800 CE, and the Viking Age, 800–1030 CE), whereas 118 (91 %) are dated to the Roman (1–400 CE) and Migration period (400–570 CE). This study will mainly focus on the early Iron Age.

How widespread was the custom of furnishing burials with bear remains during the early Iron Age? Since the total number of burials is difficult to quantify, this basic question cannot be easily answered. The analysis undertaken by Holck (1986), comprising 1,082 cremations from southeastern and southernmost Norway,[5] identified bear claws in 51 of 919 cremations dated to the early Iron Age. The remaining eight claws were dated to the Bronze Age and late Iron Age (Holck 1986, 56, 176). This implies that approximately 6 % of the early Iron Age burials contained bear claws, indicating it was a rather rare type of grave gift.

The large size and distinct anatomy make complete bear claws easy to recognize (Figs. 3–4). Heating, however, causes bones to fragment, shrink and deform. Petré (1980, 8) shows that a claw shrinks by 20 % on average during cremation at high temperatures. This may obscure species identification, and some of the most fragmented claws may have gone unnoticed. A total of *c.* 740 fragments of burnt bear claws have been noted, but fragments may belong to the same claw, so this number is a rough estimate. Most of the cremations comprise only the claw, or more accurately the ossified 3rd phalanx, where the outer claw was attached. A complete bear skin would amount to 20 claws if both hind- and forefeet were still attached. Such a large number is rare in the archaeological record (Fig. 5). 40 % of the findings encompass one or two claws, 80 % have less than ten. Thus, even if we assume a high degree of fragmentation and that some claw-fragments have been missed, it is still safe to conclude that many claws are unusual. In one cremation (C29859) eight fingerbones (phal. II) and some metapodial fragments were identified in addition to eight claw fragments, indicating the presence of a larger part of a bear paw (Mansrud 2004b, 130; see Appendix 1). In two cases, the bear claw has a drilled hole in the proximal end, indicating it was utilised as a pendant or attachment (C20314 and C35844; Fig. 4). In addition, one fragmented bear fang is documented (B6474).

3 This distribution pattern differs from the current geographic distribution of brown bears in South Norway, which is restricted to the Norwegian/Swedish border in the interior region. In 2019 this population was estimated to approximately 104 individuals (Fløystad et al. 2020).

4 Recent methodological developments, using microarchaeological analyses of soil samples, have identified hair fibres suggesting the presence of bear pelts in a number of Finnish burials dated to early Medieval times (cf. Kirkinen 2017; Mannermaa et al., this volume).

5 Finds deposited under the jurisdiction area of the Museum of Cultural History, University of Oslo. The finds from Vestland are deposited at the University Museum, University of Bergen.

Mortuary treatment and regional variation

The mortuary assemblage from South Norway (Appendix 1) represents a variety of landscapes, ranging from the coastal zone to alpine areas, and subsequently also different groups of people with diverse subsistence economies and cultural traditions. Iron Age mortuary customs differed chronologically and between regions (Solberg 2000). Overall, mounds, cairns, and stone settings with successive burials are common in all areas of South Norway during the Roman and Migration periods. Cremation and inhumation often occur in the same mound. In several cases unburnt bear skins were also utilised as a cover for the urn, as a cover for the cremated bones deposited within the urn, and as part of the furnishing of the grave (Appendix 1; cf. also Grimm 2013, 283–284). Many of the graves with bear claws were documented during early excavations. The documentation of these contexts is variable and sometimes lacking (Appendix 1). Some of the graves were not excavated by archaeologists but discovered during farm work and handed in by local farmers, and many burials have further been robbed or disturbed in other ways. These source-critical problems complicate the contextual analysis.

The burials from western and southern Norway are constructed according to strict conventions (Shetelig 1912, 110; see Appendix 1). Stone chambers/cists are common. The cremated remains are usually deposited in a cauldron, a ceramic vessel, or an organic container, more rarely as an ash layer scattered with charcoal and burnt bones. Cauldrons and so-called bucket-shaped pots are frequently used as urns. The burnt assemblages commonly consist of human and animal bones mixed with burnt artefacts which have been collected from a pyre site. Bones and teeth from horses, sheep/cattle and birds are noted in some cases.

The mortuary customs in southeastern Norway appear more diverse (Appendix 1). This part of Norway can be further divided into geographic areas with regional variation in mortuary practices, but generally the cremations in mounds occur in ash layers, pit burials, or deposited in urns. Ceramic vessels with handle and organic containers made of birch bark are frequent, bucket-shaped pots and cauldrons less common. There are also several examples of cremated remains wrapped in an unburned piece of hide (variously determined as cow, horse, or bear) before being deposited into the urn (C2707, C8999, C23256, C35805). Animal bones mixed with human remains are common (Holck 1986). Cattle, horse, and dog are the most frequently identified species, but only a limited number of the faunal remains have been analysed so far (Mansrud 2004a; b; 2006, 2008).

Gender and age distribution

Figure 6 summarises the most frequent artefacts appearing together with bear claws in the investigation area. Objects commonly considered indicative of wealth or gender, like weapons, silver/gold objects and jewellery have been merged into categories (Fig. 6, for further description of the grave goods, see Appendix 1). Following Sellevold et al. (1984), Petré (1993), and Kristoffersen (2004), the following criteria were used for archaeological gender assignment for female burials: textile tools (spindle whorls, sword [weaving] batons), bone hairpins, keys, jewellery, more than five beads; for male burials: weapons (swords, axes, spearheads, lances, arrowheads, shields), stirrups, simple ring pins, weights, singular beads, blacksmith and carpenter tools (hammer, anvil, pliers, drill, saw). Several types of grave gods like knives, combs, or gaming pieces occur with both genders (Sellevold et al. 1984, 232; Kristensen 2007). While male burials only comprise one or few beads, necklaces occur exclusively with females (Johansen 2004, 104). Based on these criteria, 35 burials were assigned as female, three as possibly female, nine as male, and four have objects associated with both genders. The lack of proper documentation and excavation techniques, together with disturbances of graves, often makes

it difficult to decide whether the latter category represents double graves or mixed graves. In most cases, 79, it is not possible to determine whether the interred individuals were male or female (Fig. 7).

The cremated human remains from southernmost and southeastern Norway have additionally been morphologically sexed by osteologists (Holck 1986). Twenty-eight individuals were identified as male and nine as female (Fig. 8). Several cremations suggest that more than one individual is present, and three burials comprise a male as well as a female. There is also a discrepancy between the osteological sex-determination and the grave goods in several cases.

Determining the sex of burnt human remains is by no means a straightforward task (McKinley 2000, 412). The methodological issues inherent in osteological sex-determination as well as the normative categorisations imposed by archaeologists classifying grave goods as male or female (Hjørungdal 1991; Petré 1993; Solli 2002; Lund/Moen 2019; Price et al. 2019) make it difficult to quantify the relationship between gender and bear claws, but arguably, bear claws occur with both genders. With regards to age, the number of children or subadult persons burials is low (as among Iron Age burials in general), amounting to only three cases in western Norway (Krüger 1988, 361) and three in southeastern Norway (C32757, C52083, C560077). The cremated remains were identified as children aged 1–8 years old, and in all cases, they were buried together with adult individuals (Appendix 1).

Grave goods, wealth, and identity

Inhumations with bear skins are commonly linked with economic wealth and high-status individuals (Petré 1980; Kristoffersen 2000; Grimm 2013; Lindholm/Ljungkvist 2016, 5, 10–12; Zachrisson/Krzewińska 2019). An exception is the burial from Døsen with rather meagre furnishings (Grimm 2013, 282). How are wealth and identity expressed in the cremations with bear claws? Jewellery is present in 24 % of the burials, gold/silver objects are present in 16 %. These two categories are overlapping, since identifying burnt objects is often difficult. Certain jewellery types indicating the highest status are present in two graves. C28986 contained a gold berlock and B5931 a gold fingerring with a serpent head, an artefact considered as insignia of the uppermost elites (Reiersen 2018). Brooches are present in eleven burials. Of these, five are cruciform, one is equal-armed, and one is beak-shaped. The remaining ones are undefined. Fragments of various fibulas of silver or bronze are identified in 19 graves. In cases with disturbed graves, gold/silver objects and weapons would have likely been looted and could thus be underrepresented. In addition to items which were part of the dress, like fibulas, belt buckles, and various fittings, bear claws most often appear in combination with combs[6] (51 %), gaming pieces/dice (26 %) and bone pins, commonly interpreted as hair pins (11 %). Such objects most likely represent personal belongings. Several graves also contained objects interpreted as amulets or as having protective functions: beads, a copy of a Roman emperor gold medallion with animal figures (B11546), a solidus coin (B8983), and a bone knife with a runic inscription (B6700; Samdal 2000, 62; Røstad 2008). In 29 cases (27 %) the cremated remains have been deposited in a cauldron (Fig. 6). Cauldrons as burial containers are often regarded as a high-status phenomenon, and these burials are often richly equipped (Hauken 2005), but not all the cauldron-burials with bear claws belong to this category.

Weapons occur in 8 % of the burials. Weapons like arrows and spears may have been used for warfare as well as for hunting. Arrowheads occur in seven burials. Two of the arrowheads are made of iron, the remaining five are bone arrowheads. Seven graves contain spearheads, four of them are dated

6 These are commonly referred to as bone combs in the database, but the osseous raw material used for comb-making was antler, not bone.

to the Roman/Migration period. C27077, C17305, C22231 and C28980 can be classified as "warrior graves". They contain sets of weapons including spears, swords and shield bosses and are also similarly constructed with burnt bones deposited in a cauldron (C26791 lacks contextual information). In C28980 stirrups for riding were present – this is the only Early Iron Age grave in the total assemblage containing such equipment. Two more finds of stirrups are from the interior regions of southeastern Norway and dated to the late Iron Age. C20314 is presumably a double grave, containing a full set of weapons, riding equipment (bits) as well as a weaving baton, keys and two spindle whorls, whereas C32693 only contains weapons associated with hunting. This context will be returned to below.

Swords are present in three graves (C27077, C52092, C22231). C52092 is classified as a weapon burial from the pre-Roman Iron Age (Martens 2008, 309). Arrowheads were identified in seven graves, of which five are dated to the early Iron Age (C37631, B6475, B6691, B8872, B11546). In B6475 an iron arrowhead was present, in the remaining graves the arrowheads are made of bone. Thus, none of these assemblages can be classified as "warrior burials". Moreover, these contexts are interpreted as male because arrowheads are present, but they also include objects which are not gender-specific, or which point to the presence of a female. C37631 contained a fibula, bone pin and spindle whorls, and B6691 contained a bone pin.

Several burials are also "simple" in content as well as in construction. For example, C55949, a cremation pit ^{14}C-dated to 240–420 CE, contained skull and joint fragments of a slender, adult individual, 153 g of burnt animal bone, a bone needle and a bear claw (Fyllingen 2008). Another example is C60497, i.e. a pit filled with bones (originally deposited in an organic container), probably those of a female, 29–40 years old, buried with an iron ring, six bear claws and 34 fragments of gaming pieces, dated to 400–540 CE (Ødegård 2017). Cremated bone deposits are not always associated with artefacts, and some bone deposits do not contain human bones at all (Holck 1986). Seven human individuals had cut-marks according to Holck (1986, 178–185), who interprets this as intentional destruction of the bodies as a part of the mortuary rituals, suggestibly indicating anthropophagy or some form of ritual de-fleshing. The results are thus in accordance with Krüger's (1988, 359–361) observation that cremations with bear claws range from rich to simple and do not differ in this respect compared to cremations without bear claws. So, if bear claws are not associated with warriors, shamans, or elite individuals in general, what does their presence in a grave indicate? It is for example interesting to note that in five graves, fragments of wooden buckets or trays are present (C8999, B4591, B6756, B8853, B12046). Cattle remains, buckets, dung forks, a trough, barrels, and shovels were also part of the furnishing of the Oseberg Viking Age ship burial (Hedeager/Østmo 2005, 283). The farming equipment points to the importance of maintenance activities and farm work. Yet, archaeological interpretation tends to focus on the potential status of the buried woman as a queen (Christensen et al. 1992; Pedersen 2017). Grave goods and mortuary rites potentially have many meanings. Social identity encompasses more than gender – most individuals likely fulfilled multiple social roles and functions in life, and the various items in a grave may express these composite identities (Pedersen 2017; Lund/Moen 2019, 142). In the following, these different meanings and identities will be explored.

Transformation or protection?

As initially stated, bear claws in burials are commonly linked to the idea that the dead were cremated with bear skins. Animal antlers, skins and paws were used for rituals and ceremonies and as media for undertaking human-animal transformations, in particular as part of hunting-rituals or shamanistic seances (Ingold 2000, chapter 6; Willerslev 2007), and shamanism has been an important frame of reference for interpreting these finds.

Human-animal metamorphosis and hybrid beings characterise the symbolic iconography of Roman and Migration period animal art (Kristoffersen 2010), and the perception of the human-animal boundary as fluid and permeable, rather than made up by fixed and static identities, has been suggested as an essential feature of the pre-Christion ontology by archaeologists (Mansrud 2006; 2008; Danielsson 2007; Hedeager 2011; Armstrong Oma 2015) as well as by historians of religion (Guðmundsdóttir 2007; Samson 2011; Dale 2014; Wallenstein 2015; Nordberg/Wallenstein 2016). Price (2002) makes a connection between *seiðr* and shamanistic practices in the circumpolar north. In the Norse tradition, human-animal transformation is referred to as *hamskipta,* which means "to change one's shape", or *hamrammr*, "able to change one's shape". These compounds include the noun *hamr*, meaning "form, shape", "skin", or "shape assumed by a disembodied spirit", as their first element. The latter term has the adjective *rammr* "strong, powerful mighty" as a second element (Fritzner 1954; Heggstad et al. 2012). A person who had the ability to change shape was also called *hamhleypa* "ham-leaper", i.e. had the ability to act out-of-body (Raudvere 2001). In archaeology, such practices have been related to the idea of perspectivism (Viveiros de Castro 1998), involving an ontological understanding that an animal's perspective and properties can be accessed through the use of animal materials (Conneller 2004; Lahelma 2019).

However, the concept of human-animal transformation is neither confined to the pre-Christian ritual practice, nor to circumpolar traditions. Similar understandings are also documented among hunters, herders and fishermen in Norway in the 19th and early 20th century (Hermundstad 1967; Hodne 1997, 101), a period otherwise characterised by an ontology focused upon ideas of a hierarchical ordering of Gods, humans and animals (analogism; see Descola 2010, 338). Ontologies may vary within cultures – folklorists have for example identified shamanistic influences in Norwegian folktales (Grambo 1975) – and mastering the art of shape-shifting was an important part of the Norse *trolldóm* (Raudvere 2001, 86). The vernacular Iron Age ontology may have been hybrid, encompassing animistic/shamanistic and analogistic elements. Within both ontological systems, interaction with parallel dimensions, inhabited by the dead, animals, and supranormal beings, was not limited to shamans or other religious experts, but a natural and integrated part of everyday life (Price 2002; Østigård/Kaliff 2020). Importance attributed to bear skins is also known from medieval and early modern churches. Six radiocarbon-dated skins from churches in South Norway show a range in dates from the high Middle Ages around 1300 to the 18th century (Jahnsen 2012, 88–89 ; see also Jahnsen, this volume). The temporal continuity of the bear skin tradition is also remarkable.

Price (2002) interprets *seiðr* as an aggressive battle-magic, associated with Oðinn and crucial to the martial, predatory way of thinking in a warrior society, involving sexual magic, shape-shifting, and animal transformation of warriors into *berserkir* and *ulfhednar*. But human-bear transformation is, except for the tale of Bǫðvar Bjarki in the saga of Hrolf Krake, who was able to transform into a bear during battle, unusual in the Germanic texts (Pentikäinen 2007, 26). Overall, origin-stories in which non-human beings are entangled in social and sexual relations with humans are much more widespread (Gilhus 2006). Such stories appear in Germanic as well as classic myths, in documents like Olaus Magnus' history of the Nordic people (*Historia de gentibus septentrionalibus*, 1555), in circumpolar ethnography, and Norwegian and Finnish folklore. Legends of encounters between bear-humans and other supranatural beings are also noted in later lore. In the Norwegian folk tradition specifically, a shape shifter (*hamløper*) always refers to a man who turns into a bear[7] (Norw. *mannbjørn*). Stories of man-bears are long-lived and were recorded in various regions of Norway well into the 19th century. The transformation was undertaken using a piece of a bear skin, a foetal membrane,

7 In classical and historical legends, this phenomenon is termed lycantrophy, derived from Greek *lykos* "wolf" and *anthropos* "man", and most often concerns a human being turning into a wolf (Lid 1950, 86; Edsman 1994; Kuusela 2012; Pluskowski 2015).

or a belt (Reichborn-Kjennerud 1933; 1947, 113–115, 123, 134; Lid 1950, 82, 86–87; Nordland 1958; Hermundstad 1967, 69–108; 1985, 96–106; Hodne 1997, 121–136). In the Norwegian bear tradition, transforming into a bear or encountering such a creature is not described as something desirable – rather it was the result of magic and something to be avoided. The core motif in Norwegian bear legends is an encounter between a woman and a bear taking place in the outfields (Reichborn-Kjennerud 1947, 128; Hermundstad 1985, 99). These legends are linked with the idea that bears were dangerous for pregnant women, because the enchanted man-bear was intent to rip out the unborn child and raise it as his own, to break the spell and become human again (Reichborn-Kjennerud 1933, 58–59; 1947, 129–131; Nordland 1958, 143).

Holck (1986, 173–174) has argued against the idea that bear skins were cremated with the dead; maintaining that the bear skin with thick fur would have protected the body and hampered the cremation. Another possibility to consider is whether the claws could be related to clothing. Bear skins are heavy, rather unsuited for making clothes, but have been used for making capes, mittens, and furnishing for sleds and beds (Grimm 2013, 278; Kirkinen 2017, 15). In one case (C21945) a bear phalanx had cut marks, indicating that it had been cut loose from the paw. This agrees with the observation that during skinning, the skin is detached by cutting the second phalanges, while the third remains with the skin (Kirkinen 2017, 7). Bear skin collars are mentioned as part of the outfit of Germanic tribes (Hatt 1969, 26), and the presence of capes in burials has recently been suggested for Iron Age burials in Sweden (Zachrisson/Krzewińska 2019[8]). One of the burials (C29912) contained 12 complete and 13 fragments of phalanges and metapodials from pine marten (Mansrud 2004b, 48, 130, see also Appendix 1). This find might be from a marten cape or collar, with the feet still attached. Ethnographic collections encompass Sami bear collars where the front paws have been sewed onto the front, perhaps as decoration, or for protection (Fig. 9).

Literature on fur clothing among Eurasian groups rarely mentions claws, teeth or paws as part of everyday dress (Hatt 1969). Such items are more commonly used as pendants or attachments. From most cremations it is not possible to infer how the Iron Age bear claws were used, kept, or worn, but an unusually well-preserved female inhumation (B4234) indicates that they may have been attached to clothing. Preserved fragments of a woven belt with bronze fittings were found in this grave, with a piece of animal skin and a bear claw still attached to the belt-fittings. This suggest that the woman wore a claw in the belt, perhaps alongside other personal items, as noted in contemporary Iron Age contexts in cultures in Finland and Latvia, which also have a rich bear tradition. Here, pendants interpreted as bear teeth replicated in bronze, occasionally combined with real bear teeth, ornaments and various everyday utensils, were attached to the female dress, suggestively functioning as protective items[9] (Kivisalo 2008, 265; Herva/Lahelma 2019, 84; for further discussions of bear pendants and trophies cf. also Henriksen 2009; Girininkas/Daugnora 2013). Thus, the use of bear claws as protective items will be contextualised within the framework of vernacular belief, and the analytical concept of apotropaic magic.

Amulets, magic and agency: Objects for protection, manipulation, and luck

Magic is a complex notion and there is no unanimously agreed definition (Otto/Stausberg 2013, 1). In this chapter I focus on magic as a vernacular, supranormal practice. The most often used term in

8 Their re-evaluation of Swedish bear claw burials further identified several cases where claws assumed to be bear turned out to be birds of prey, wolf, or lynx (Zachrisson/Krzewińska 2019). This might also be the case in C29610 and B6691.

9 The interpretation has been challenged by Jonuks (2017) arguing that the bronze pendants do not resemble bear canines. Alternative interpretations and species involve dogs, wolves, or pigs, and he also speculates that the bronze pendants can represent fangs of fantastic creatures like dragons or serpents.

Norwegian is *trolldom* (Alver 2008, 13–33, 38).[10] Frazer's (1994) seminal work, originally published in 1890, outlining magic as a primitive form of science rooted in a human desire to master nature, has remained influential. His view of magic as form of primitive superstition, a precursor to religion, and a stage in an evolutionary development from irrational beliefs towards rational science, made the notion problematic. It became a negative marker of otherness, relegating non-Western subjects, past peoples, and rural populations to primitives (Otto/Stausberg 2013). As noted by Gilchrist (2019, 27): "Historians grapple with ambiguities in the definition of magic, but their starting point can be found in normative categories of magic as defined by the authors and critics of magic texts. The starting point for archaeologists is in the material record, which has no direct voice; the subtleties of meaning, intention and agency can only be unlocked by developing theoretical frameworks for interpreting archaeological evidence."

The ontological turn, with the concepts of animal and object agency, allows for approaching the concept of magic in new ways (Gell 1998; Henare et al. 2007). In vernacular understanding, magic was perceived as something very concrete, a force or power affecting animals and humans, which could be harnessed and transmitted from a person to another, from a person to an animal or a thing by actions, words, thoughts, or objects (Tillhagen 1958, 116–117; Ström 1967, 221; Alver 1971, 175). Magical remedies and spells were used for coping with everyday challenges, illness, and bad luck.[11] The conception of *trolldom* remained strongly integrated in the Norwegian folk tradition, despite protestant Christianity and the efforts of the church to fight superstition and discipline the congregation into accepting the correct faith (Alver 2008, 288).

The question of object agency has recently been brought to the fore of Iron Age archaeology (Lund 2017; Vedeler 2018; Eriksen 2020). Previous archaeological writings on the notion of magical items in burials depart from the understanding that a relationship between the object or material in question should be documented in written sources (Meaney 1981; Gilchrist 2008; 2019). In the Old Norse religion various types of magical practices are described including techniques for communicating with spirits, such as *seiðr* and *galdr* (a form of *trolldom)*, incantations, curses (verbal magic), rune magic (word magic; cf. Strömbäck 1935; Ström 1967, Steinsland/Sørensen 1990, Dillmann 2006; Tolley 2009; Price 2019; Røthe 2020). In the Old Norse literature artefacts with magical properties like "life stones" and "victory stones" (Christie 1837; Ringstad 1988, 328) are generally referred to as *hlutr/lutr* (objects). In archaeology, tooth and claw pendants, lead crosses, bracteates with runic inscriptions, beads and egg-shaped stones found in burials have been interpreted as amulets (Linderholm 1918, 49; Olsen 1907; Grieg 1954, 163; Bøe 1956; Blindheim 1959; Magnus 1986, 349; Fuglesang 1989; Røstad 2008; Gilchrist 2019). A study of grave goods from western and southwestern Norway resulted in 185 burials with such artefacts (Samdal 2000).

An amulet can be defined as an object kept or worn on the body for preserving against affliction; its protective power can be apotropaic, therapeutic, or exorcistic (Gilchrist 2008, 124). Originating in the Latin *amulêtum*, or the Old Latin *amoletum*, meaning "protection", the word is used in Pliny's *Naturalis Historia* from the 1st century CE to describe objects that offer protection, are used in medical or prophylactic treatment, or as a substance in medicine. Pliny offers several examples of protective amulets, for example to hang a piece of amber or horn on an infant to protect it against sorcery and evil forces (Budge 1961, 12–14). The use of items like "thunderstones", i.e. stone axes believed to be conjured by lightning, is described in classical as well as Old Norse literature, and widely documented in European folklore, underscoring the continuity of the custom.

10 "Magic" is derived from the Greek word *magos*, referring to the intellectual priesthood in ancient Persia, researching subjects like medicine, astrology, dream interpretation, oracle interpretation, etc. (Storm 1975, 28).

11 It is commonly distinguished between scholarly magic (chemistry, astronomy, etc.) and folk magic (practical knowledge of pregnancy, medicine; cf. Alver 2008).

In Medieval England amulets and charms were worn by people at all social levels. Magic was also performed in rural communities as part of agricultural practices linked to the fertility of fields (Gilchrist 2019, 18). Meaney (1981) argued that certain items were credited with the power to bring luck or avert evil by virtue of their substance and their inherent physical properties. The most powerful objects were those combining natural and sacred properties, such as jet and amber, which may develop a static charge and emit a smell when rubbed. The use of animal body parts, in particular teeth and claws as amulets, charms and magical devices offering protection and luck is well documented in ethnography, historical documents and later lore. They are mainly associated with protection, to bring luck, ensure hunting success and good health, and avoid mishaps and protect children (Edsman 1995; Kouljok 1999, 143; Hill 2011; Walker 2013, 46–47). In Anglo Saxon Britain boar tusks and antler tines were used as fertility amulets, other animal remains were used in relation to sex, conception, contraception and birth (Gilchrist 2019, 15). Animal remains have been attributed with healing powers and widely used in folk medicine (Tillhagen 1958; Estes 1989; Wiseman/Ellis 1996; Lev 2003; Nóbrega et al. 2013; Gilchrist 2019). In the following I suggest that bear claws may have been used in various ways, for securing success in hunting, protecting women, children, and cattle, and for coping with illness.

Bear claws as hunting charms

Prior to the invention of guns, bears were hunted with spears and various types of traps and snares (Oehrl 2013 ; see Almond, this volume). A direct confrontation with a bear thus was a dangerous form of interaction, where amulets or charms were likely to have been used. Hunting trophies are also well known. In ethnographic accounts and later lore, animal remains like claws or teeth linked with hunting are not trophies, but charms for securing luck in hunting. The use of animal charms in the context of hunting generally falls into two categories; charms that represent animals, and charms which are parts of animals. Among animist societies figurines representing animals were invested with the spiritual power of the animal represented. They were commonly used for summoning specific prey or invoking the qualities or salient features of an animal within the hunter (Hill 2011, 441–415). A variety of animal parts were also used as hunting charms – teeth, claws, skulls, beaks, feathers, small bones. They belonged to individuals and were commonly attached to the clothing, worn in the belt, or adorning the hunting gear (Kouljok 1999; Hill 2011, 412). Among 18th–20th century hunters in Norway, personal hunting equipment objects (like guns) were also considered conscious agents. To protect a gun from black magic and retain its luck (Norw. *hell*), it was equipped with protective amulets like a silver bullet, an animal claw or tooth, or a feather. These were called the gun's lucky charms (Norw. *hellmaskott*; cf. Hermundstad 1967, 20; Alver 1971, 176–179; Hodne 1997, 101). Within these ontologies, artefacts have agency, but the agent is not the thing itself. It is the agentive power emancipating from the animal's spirit, soul-essence, life, or vitality, retained within the object, which brings luck and success in hunting (Mauss 2001, 137). If a charm did not "work", it was discarded (Kouljok 1999, 164).

Two bear figurines made of jet from burials dated to the Viking Age may represent charms or amulets (Figs. 10–11; cf. Resi 2005, 89; see Oehrl, this volume). Their curled-up positions resemble a motif known from Viking Age brooches, known as the gripping beast (Nordeide 2015).

Bear teeth are frequently used as pendants among hunter-gatherer groups in the north. In the present material one fragmented canine tooth of bear is identified (B6474). It is likely, but not possible to ascertain that it was used as a pendant. As noted, perforated bear claws are known from two burials, both burials are presumably double graves with a male and a female. Arguably, singular, unperforated claws may also have been used as pendants without a drilled hole or represent amulets

or charms (Samdal 2000, 39; Mansrud 2004a, 90–91; Wamers 2009, 18–22; Grimm 2013, 292), such as the bear claw depicted in Figure 12.

Hunting equipment and bear claws appear together in some graves. Of particular interest is a cremation dated to the Merovingian period, *c.* 600 CE (C32693, Appendix 1). This is the richest of the "hunting-ground burials" in the region of Innlandet, equipped with a dog, 13 bear claws, hunting- and comb-making equipment as well as imported Roman goods (Byggstøyl 2012, 43–44; Skjølsvold 1969, 140). "Hunting-ground burials" denote clusters of burials located near hunting grounds and pitfall systems in the mountain and forest areas[12] (Byggstøyl 2012). This tradition commences in the Roman period, but most of the graves are dated to the Merovingian time (550–800 CE). They encompass specialised hunting equipment and antler/bone processing tools, possibly pointing to an occupation connected to hunting and comb-making (Christensen 1986, 130–131). The majority are also richly equipped, indicating high social status. Heroic spear-hunting and bear fights, reminiscent of a male initiation ritual, are described in texts and imagery from the classical periods to the Middle Ages. Based on this, Oehrl (2013, 298) has suggested that bear hunting *par force,* with dogs and specialised spears, belonged to an ideologically motivated aristocratic hunting tradition. High-status bear hunts might form the background for interpreting richly equipped burials with bear claws like C32693. Bear claws do not reveal any information about hunting methods, and claws and skins may also have been acquired elsewhere, kept, exchanged, inherited and used for a long time. Finds of bear claws on Gotland and in southern Scandinavia, which had no native bear population in the Iron Age, show that bear skins were obviously traded (Petré 1980; Lindholm/Ljungkvist 2016, 5–6; Hennius 2020, 543). The use of pitfall systems in the outfields increases during the Roman period. This indicates an intensification of hunting and trapping aimed for trading purposes. Passive methods like trapping indicate professional hunters or local peasants rather than killing for sport or ideology, according to Oehrl (2013, 304). It is not possible to determine whether bears were caught using pits. Direct evidence for bear hunting is, however, documented in the mountain regions of Sogn, western Norway. Here, bones of brown bear were identified in hearths located in structures assumed to be summer farms, or shielings (Bjørgo 2005). The finds link agrarian settlements at the coast with hunting and grazing grounds in the mountains. Arguably, this implies that human-bear interactions can be considered within the seasonal practice of transhumance.

The power of the paw: Bears, cattle, and protective amulets

An agrarian economy, combining permanent farms and summer shielings, has a long tradition in South Norway. Due to the cold climate, short growth season and marginal agricultural areas, cattle, sheep and goats needs to be fed inside during the cold season. Providing enough fodder for surviving the winter was a challenge, and farming was organised as a seasonal alternation between the permanent farm and a summer shieling (Norw. *seter/sæter* or *støl*), located in the mountain or forest areas, where livestock would graze and be milked in the summer (Solheim 1952, 2–3; Reinton 1961; Visted/Stigum 1971, 202). Transhumance and the field-and-meadow system, based on alternating use of in-field areas with permanent farms, cultivation and manured fields, and outland areas with pitfall systems, tar and iron production sites, meadows, and periodic livestock herding, were established during the Roman period (Magnus 1986, 49; Bjørgo 2005; Skrede 2005; Dommasnes 2016; Lindholm/Ljungkvist 2016; Mjærum 2020; Pilø et al. 2020, 447; Prøsch-Danielsen et al.

12 The question of whether the interred individuals in "hunting-ground burials" belong to the Germanic or the Sami culture has been a topic of controversy for many years (Byggstøyl 2012).

2020). The practice was further intensified through the Late Iron Age and Middle Ages. After the demographic decline following the Black Death (*c.* 1348 or 1349) archaeological evidence shows a hiatus in the use of the mountain areas, lasting until *c.* 1600 (Pilø et al. 2020, 448). From 1600 until the industrialisation *c.* 1850, farms were unable to sustain their livestock without outfield grazing (Reinton 1961; Visted/Stigum 1971, 146–148).

Outdoor grazing made livestock particularly vulnerable to predating bears, and the fear of losing cattle to predators, disease, supranormal beings or harmful magic is a recurring theme in the Norwegian folk tradition (Solheim 1952, 8–9; Nordland 1958, 134; Visted/Stigum 1971, 214; Bø 1980). Livestock would be taken out around the same time as the bears leave their dens in spring. The brown bear hibernates between October and April, and during the summer it needs large amounts of proteins and carbohydrates to build muscles and a generous layer of fat. Bears normally shy away from people and feed on plants and carrion. But occasionally one is attracted to human habitation and turns into a hunter (Norw. *slagbjørn*), attacking sheep and cattle (Sørensen 1990). People adapted to predators by herding domestic animals, using guard dogs and building "bear-proof" stalls. When bears were spotted in an area, large fires were built to keep the predators away (Bø 1980, 92–93). A direct reference to magic protection against predators is stated in a grimoire from Nord-Hordaland: "To prevent wolves and bears taking your livestock; take the bones from wolves and bears, crush them and smear them onto your bovids, then no predator can harm them […]" (Solheim 1952, 10, author's translation). Another grimoire recipe recommends drying the predator's meat, grinding it into powder and ingesting it, as a measure to defuse the power of the marauder (ibid.). In Sweden seal blubber was smeared on cattle to protect them from bears (Edsman 1994, 174–174), and Pentikäinen (2007, 120–123) gives many examples of the use of bear remains as protective amulets in Finnish folklore. The body parts contained the *väki*, or bear's strength. Additionally, many practices related to the Norwegian shieling tradition concerned healing or protection of cows, and protection of the equipment used for storing milk-products. Quartz crystals were seen as helpful to protect cows and humans against *trolldom* and supranormal beings (Solheim 1952, 99–107, 199–228; Alver 1971, 163, 194).

The physical outline of the farm differed between the early Iron Age and later periods. Yet, traditional farming in prehistorical and historical periods presumably shared great similarities, since keeping livestock involves a certain human-animal rhythm which is controlled by the needs of the animals and therefore remains largely constant in time and space. Attending to the livestock, securing enough fodder for them to survive the winter, and protecting them from predators and disease was equally important for survival in earlier as well as in later historic periods. In the early Iron Age, the permanent farm was organised around the three-aisled longhouse, which humans shared with their herds, suggesting a close and intimate bond between humans and livestock during this period (Armstrong Oma 2017). Excavations at Nyset-Steggje in Sogn further revealed a direct connection between the permanent farms in the lowland and the summer shielings. Burnt bones from the hearths, identified as sheep/goat, cattle and pig, show that pasturing in the mountains was practiced, and marine species like seal, cod, coalfish, eel and herring were brought up from the coast. In a retrospective, multi-species perspective, practices related to farming and transhumance are relevant for interpreting human-bear relations in the Iron Age. Finds of projectile points, reindeer and ptarmigan bones as well as large pitfall hunting systems nearby demonstrate the importance of hunting (Bjørgo 2005, 223–227). Importantly, bear bones were also found, indicating that bears were hunted in the shieling area.

In Scandinavia, tending to livestock and milking was traditionally the work of women (Svensson 2015). Finds of beads, spinning whorls and loom weights used for textile production indicate the presence of women at Iron Age shielings (Bjørgo 2005, 224; Skrede 2005, 38). In the dwelling structures excavated at Nyset-Steggje, flakes of flint/quartzite and bifacial projectile points, dated to the Neolithic and Bronze Age, were found on top of the floor layers and in the walls, and beads were found in many of the dwellings (Bjørgo 2005, 215–216, 227). As noted by Røstad (2008), beads were

presumably also perceived as magic items. Rather than ending up in the houses accidentally as part of building materials these finds might, together with amber objects, represent protective amulets intentionally deposited there, like it was done in later periods. A small bear-shaped figurine of soapstone, interpreted as an amulet, was found in an Early Iron Age pit dwelling at Modvo in Sogn (Fig. 13).

I have suggested that bear claws were attached to the female dress. Samdal's (2000) study of amulets in western Norway also reveals a connection between women and protective charms – objects interpreted as amulets occur about twice as often in female than in male burials. In the folk tradition and the sagas there is a relationship between women, bears, magic, medicine and healing (Reichborn-Kjennerud 1927; 1933; Meaney 1981; Alver 2008, 291; Hedeager 2011, 123–126; Røthe 2020). Avoiding accidents and surviving pregnancy and birth were fundamental issues, and the use of amulets was related to vernacular understandings of illness – how disease was inflicted and how it could be avoided. Folk traditions distinguish between natural and unnatural death. Disease and unnatural illness came about because of *trolldom* (Alver 2008, 291). Body parts like hair and claws were perceived as a source of life force, susceptible to magic, and in folk tradition, combs were typically agentive objects with ability to harm as well as protect humans and cattle (Hoftun 1993, 57; Gilchrist 2019). Figure 14 shows a skinned bear paw with the claws removed. Such objects were used for generations to assist at difficult births and cure mastitis. During a difficult labour the paw would be used as a remedy by stroking the abdomen and the genitals, and a woman suffering from mastitis would sleep with the paw on her breast. Bear paws were also used for curing and protecting cows in a similar manner (Reichborn-Kjennerud 1933, 66; Nordland 1958; Holck 1986). The use of bear claws for apotropaic purposes is not stated in the Norse sagas. The only mentioning of bear claws is in the poetic Edda verse *Sigrdrífumál*, stanza 16, where the valkyrie Sigrdrífa reveals the magic properties of runes (Schulz 2019, 47):

> On the paws of the bear,
> and on Bragi's tongue,
> On the wolf's claws bared,
> and the eagle's beak,
> On bloody wings,
> and bridge's end,
> On freeing hands
> and helping foot-prints.[13]

Archaeological evidence such as the bear claws discussed here reveals material practices which are not documented in texts, including the placement of bear remains with the dead and objects like beads concealed in house remains interpreted as shielings. 40 % of the early Iron Age cremations with bear claws are found in the county of Vestland. Furthermore, seven bear claws have been found under the floor of Urnes church in Sogn. In 12 Norwegian churches bear paws or claws, interpreted as amulets for healing, have been discovered beneath church floors. According to Jahnsen (2012, 69; cf. Jahnsen, this volume) these items were used for magical purposes, secretly placed under the floor of the holy place in the hope to "charge them" with power. More than any other large predator, the bear resembles human beings in its behaviour and anatomical features (Sørensen 1990, 64–65). Like humans, the bear has five fingers and toes and walks on a flat foot, and a skinned paw is remarkably similar to a human hand (Fig. 14). Thus, it seems that the tradition of using of bear remains for protection fits into a long-term vernacular tradition which was specifically focused on the agency of the bear paw.

13 *Sigrdrífumál* (The Ballad of the Victory-Bringer), transl. H. A. Bellows, The Poetic Edda (Princeton 1936).

In this reassessment of early Iron Age burials in South Norway I have shown that the presence of bear claws is independent of economic status, age, or gender. Bear claws occur in male, female, and mixed cremations, occasionally also with children. In rare cases, a large number of claws are present, but most burials contain only one claw. There is also great variety in the mortuary contexts where bear claws appear. Occasionally, they are found together with weapons and hunting equipment, but most often the claws are deposited in combination with dress equipment, combs, gaming pieces and bone pins, spindle whorls, knives, beads and other personal belongings. Bear claws may have been part of burnt clothing, like collars or capes, used as pendants or worn as amulets or charms, attached to the belt. I have argued that the archaeological evidence suggests that individuals cremated with bear claws were ordinary farmers, herders, and hunters rather than chiefs, shamans, or warriors.

The reverence for the brown bear as a charismatic and powerful agentive being with supernatural powers seems to represent a cross-cultural and cross-temporal tradition throughout the geographic regions inhabited by bears (Nordland 1958, 142; Edsman 1995; Pentikäinen 2007). Folklorists, archaeologists and historians of religion alike have maintained that the circumpolar bear tradition is an ancient practice of long continuity, possibly originating in the Palaeolithic (Ström 1980; Pentikäinen 2007, 9–15; Herva/Lahelma 2019, 80). This evokes the question of how to deal with the relationship between general phenomena and historical situations in archaeological analysis. I have addressed this issue by employing a retrospective approach, arguing for a continuity in landscape utilisation, ritual practice, and bear lore over an extended time span from *c.* 400 to 1850. Similarities in practice do not necessarily constitute evidence for a direct continuity of beliefs across time, but they perhaps indicate a longstanding, common repertoire of ritual actions (Gilchrist 2019). Arguably, the perception of bears among Germanic, circumpolar, and early modern peoples were grounded in different epistemologies, relationships, and interactions with bears. Although the concept of transformation in general, and human-animal boundary crossing in particular, was integrated in the early Iron Age ontology, I maintain that the multi-species engagements involving bears and livestock confronting the Iron Age farmers resemble the experiences of early modern farmers. As noted by Pentikäinen (2007, 24) the Germanic texts do not refer to the bear as a sacred animal in the way it is perceived in the circumpolar bear traditions. Based on evidence from Finland, it has been argued that attitudes towards bears transformed as the subsistence base changed from hunting to an agro-pastoral economy. For agricultural societies the bear became a harmful predator, killing cattle and eating grain. A similar change in attitude is documented in poetry and bear rituals, which acquired new functions in an agricultural context – to protect the cattle and the whole human sphere (Kivisalo 2008, 276–277). Against this background bear claws can productively be conceptualised as protective amulets, rather than devices for transformation or symbols of shamanic practices. By drawing on the notion of apotropaic magic as an analytic framework, bear claws in the local context of early Iron Age South Norway can be perceived as powerful objects, imbued with a potent essence of "bearness" which was utilised for therapeutic, safeguarding and protective purposes.

Why were the bear claws burnt and finally deposited in early Iron Age burials? Overall, great care seems to have been undertaken in gathering the claws and placing them in the grave along with the cremated human bones. This indicates that the deposition of claws with these dead individuals was an important part of the mortuary rite (Ström 1980; Krüger 1988). Perhaps the bear claws were intended to keep on protecting their owners in the world beyond, or they were considered an effective mediator, facilitating the transition to the realm of the dead. The bear hibernates through the winter and awakes from its den in spring. Its seasonal behaviour has been associated with liminal states. Its material remains have been interpreted as objects that stand in contact with other dimensions and therefore have transcendental properties which facilitate transformation (Hedeager 2011, 84, 92).

Artefacts with strong agentive powers and a long history of use and interaction with their owners could also be perceived as dangerous, and the performance of magic often involves the deliberate destruction or mutilation of such objects (Gilchrist 2019, 17). Cremation has been suggested as a way of releasing the spirit of the dead (Williams 2015). As described above, the remains of seven individuals interred with bear claws had intentional cut marks indicating the deliberate destruction of their bodies (Holck 1986, 178–185). Iron Age cremations in South Norway further contain a significant number of deliberately destroyed items like swords and gold rings (Shetelig 1912, 179–201; Aannestad 2018; Reiersen 2018), and similar ideas have been discussed in relation to human remains (Oestigaard 1999). When a person dies, his or her belongings must either be destroyed, burnt or purified ritually, or deposited in the grave (Viveiros de Castro 1998; Kouljok 1999, 105). In this perspective, the destruction of bear remains through fire could also be an act of transformation – a way of harnessing the powerful capacities inherent in these objects (Fig. 15).

Acknowledgements

I wish to thank Ingunn Marit Røstad for commenting on an earlier version of the paper and helping me with the English artefact terminology, Kyrre Kverndokk for numerous discussions and invaluable help with literature about the Norwegian shieling and bear traditions, and Grethe Moell-Pedersen for making the map.

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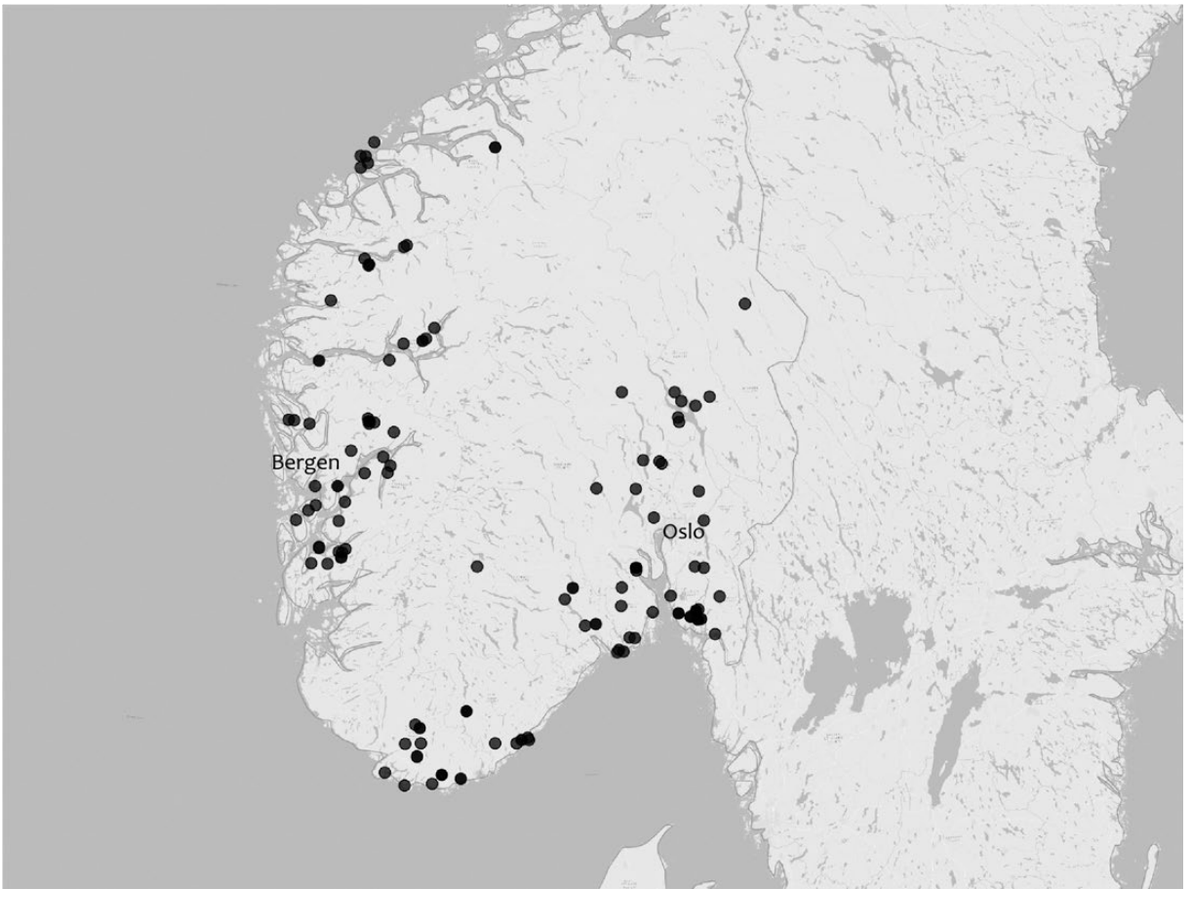


Fig. 1. Distribution of burials with bear remains in the investigation area (map G. Moell-Pedersen).

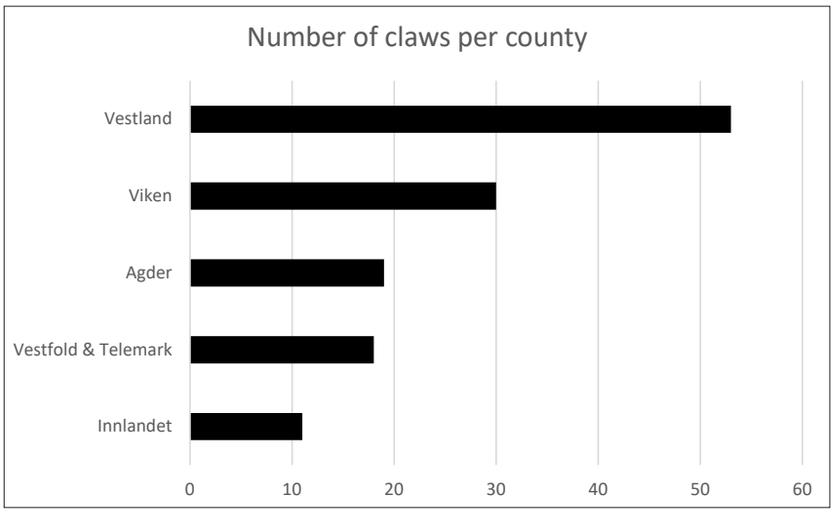


Fig. 2. Number of burials with bear claws per county in South Norway.



Fig. 3. Two unperforated bear claws from burial C22231 (photo K. Helgeland, Museum of Cultural History, University of Oslo; CC BY-SA 4.0).



Fig. 4. Perforated bear claw, used as a pendant or amulet, from C35844 (photo K. Helgeland, Museum of Cultural History, University of Oslo; CC BY-SA 4.0).

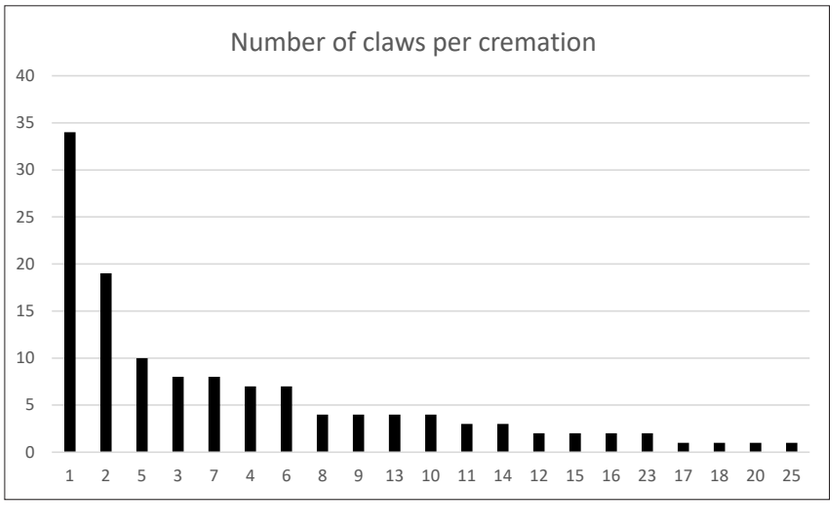


Fig. 5. Number of bear claws identified in the 130 cremations of South Norway. 80 % contain less than 10 claws, 40 % contain one or two claws.

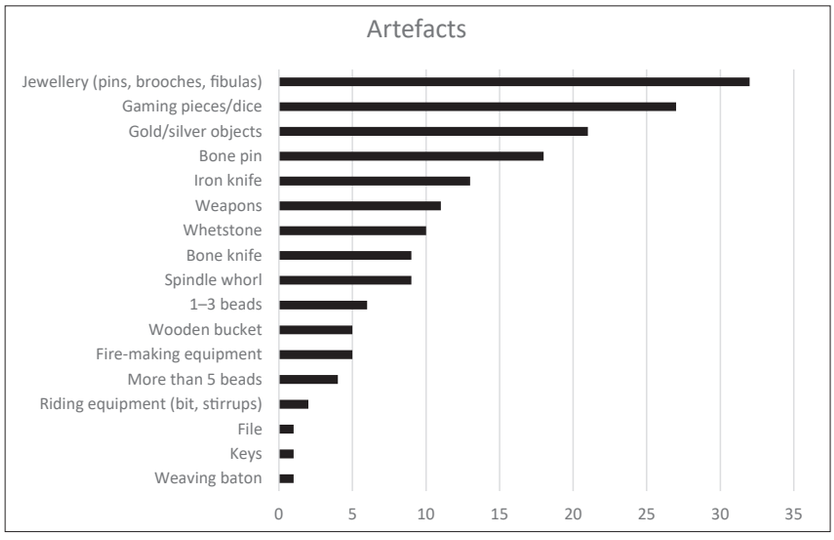


Fig. 6. Summary of common grave goods in South Norway. For a detailed overview, see Appendix 1.

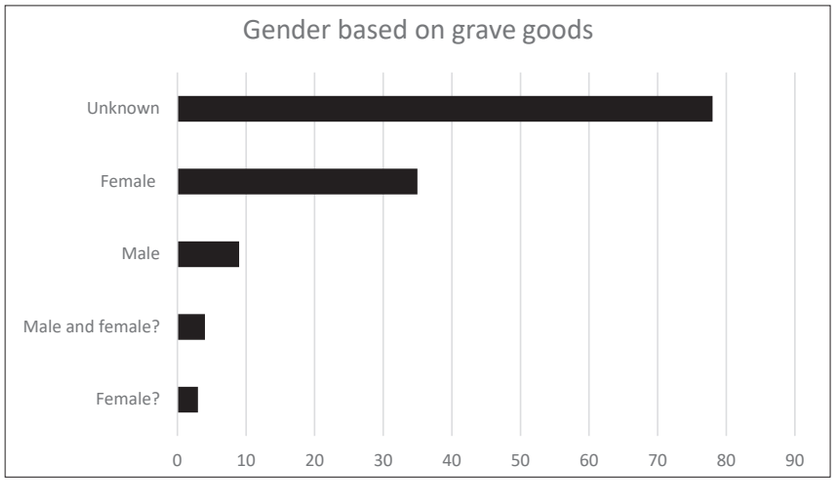


Fig. 7. Gender distribution in South Norway based on grave goods described in Appendix 1. The majority of the early Iron Age burials are equipped with grave goods that are not gender specific.

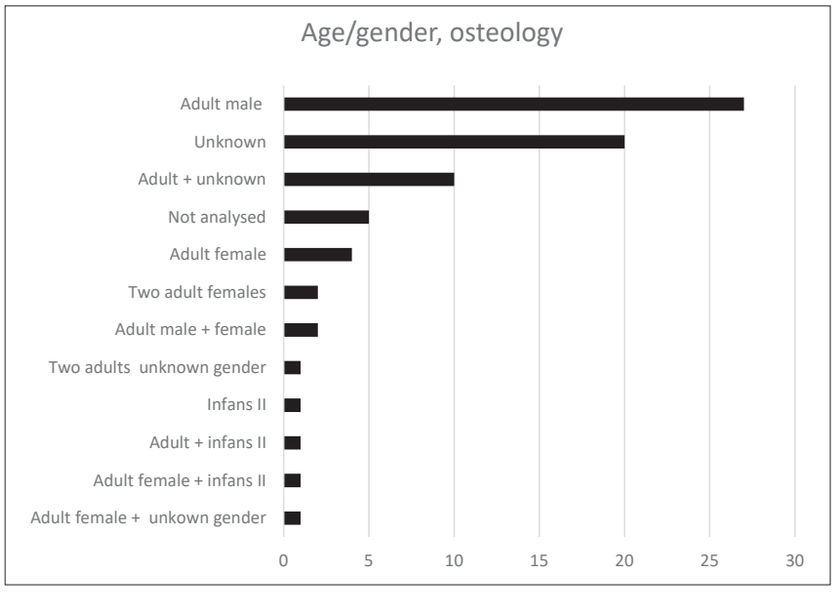


Fig. 8. Age and sex distribution in South Norway by numbers, based on osteological determination (Holck 1986; Fyllingen 2008; Sjöling 2017). Most of the cremated remains were determined as adult males, but bear claws also occur with women and children of various age.



Fig. 9. Sami bear cape from Finmark, dated to the 1870s (photo A.-L. Reinsfelt, Norsk Folkemuseum; CC BY-SA 4.0).



Fig. 10. Bear figurine made of jet, from Råde in Østfold, eastern Norway, dated to the Viking Age (photo A.-M. Olsen, Bergen University Museum; CC BY-NC-ND 3.0).



Fig. 11. Bear figurine made of jet, from Vestnes in Møre og Romsdal, western Norway, dated to the Viking Age (photo K. Helgeland, Museum of Cultural History, University of Oslo; CC BY-SA 4.0).



Fig. 12. Bear claw once belonging to Daniel Andersen Tyskeberget (1778–1856) who allegedly shot around 100 bears (photo B. Løken, Anno Norsk Skogmuseum).



Fig. 13. Small bear figurine found in an Iron Age pit dwelling at Modvo in Sogn, western Norway (B11436; photo O. Espevoll, Bergen University Museum; CC-BY-NC-ND-3.0).



Fig. 14. Skinned bear paw with the claws removed (c. 1890–1894) from Veitestrand in Hafslo, used for assisting at difficult births and for healing mastitis in women and in cows (photo L. Asle Vold, De Heibergske Samlinger).



Fig. 15. The power of the paw? Five bear claws anatomically arranged as a paw by Ellen C. Holte (photo E. C. Holte, Museum of Cultural History, University of Oslo).

Appendix 1. Overview of Iron Age cremations with bear claws. Chronological periods – EIA: Early Iron Age; LIA: Late Iron Age. Chronological phases – PRIA: Pre-Roman Iron Age (500 BCE – 1 CE); RP: Roman period (1–400 CE); ERP: Early Roman period (1–200 CE); LRP: Late Roman period (200 CE–400); MP: Migration period (400–550 CE); MVP: Merovingian period (550–800 CE); VP: Viking period (800–1030 CE). Information about finds and context gathered from Unimus-portalen (Universitetetsmuseenes kulturhistoriske samlinger). B – Catalogue-numbers referring to Bergen University Museum, Bergen; C – Catalogue-numbers referring to the Museum of Cultural history, Oslo. Object type R. refers to Rygh 1885. Information about age and sex of the human skeletal remains mainly after Holck 1986. Additional sources: Shetelig 1912; Resi 1986; Samdal 2000; Mansrud 2004a; b; Fyllingen 2008; Martens 2008; Ødegård 2017; Ødegård et al. 2017.

Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C959	Fossum, Viken	5	EIA		Human and animal bone, no information about context.	Adult male	Unknown
C2707	Halsa, Agder	1	EIA		Submitted find, not excavated. Bronze cauldron filled with human and animal bones, wrapped in animal hide. Iron axe, glass mosaic bead, gaming pieces, fragments of iron sword, knife, spear.	Adult male	Male
C4941	Solum, Vestfold og Telemark	1	EIA		Mound containing a bronze cauldron filled with burnt human and animal bones, wrapped in a calf hide.	Adult male and female	Unknown
C5578	Kraby, Innlandet	2	EIA		Mound with ash layer, containing a pot with handle and spout, burnt human bones and fragments of a bone comb.	Adult and subadult (teeth), unknown gender	Unknown
C7340	Fjære, Agder	23	EIA		Mound containing a double grave, burnt human and animal bones; no information about grave goods.	Adult male and female	Unknown
C7353	Fjære, Agder	1	EIA		Mound; no information about grave goods.	Adult male	Unknown
C8999	Lyngdal, Agder	1	EIA	MP	Mound with stone chamber containing three bucket-shaped urns and a wooden bucket. Bronze cauldron filled with burnt human bones, wrapped in horse skin. Quartz whetstone, skin pouch containing an unidentifiable fragment of bronze, an iron celt with wooden shaft, an iron knife, a golden ring, five hazelnuts.	Adult male	Unknown
C11092	Evje verk, Evje, Agder	16	EIA		Mound with stone chamber, containing a bronze cauldron, covered in birch bark. Burnt human and animal bones, fragments of a bone comb.	Adult male	Unknown
C17305	Hvannes, Sauherad, Vestfold og Telemark	1	EIA		Mound with stone chamber, containing a bronze cauldron with burnt human bones, two iron spears, a shield boss with fittings, iron fittings and an unidentified bone artefact.	Adult male	Male

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C17342	Sauherad, Vestfold og Telemark	3	EIA		Presumably from the same grave as C17305. Fragments of pottery and burnt human and animal bones.	Adult, unknown	Unknown
C19172	Opstad, Viken	7	EIA		Damaged mound with irregular stone chamber, scattered bones and artefacts. Pottery vessel, type R. 361 or R. 364. No human bones identified.	Not analysed	Not analysed
C20314	Arstad, Stange, Innlandet	1	LIA	VP	Mound with ash layer, burnt human and animal bones. Single-edged sword, spear, axe, three shield bosses, two bits, three knives, three rattles, iron cauldron, weaving baton, sickle, three scissors, two spindle whorls, iron chisel, casket handle, casket fittings, iron key, skewers, iron nails, four combs, a perforated bear claw.	Adult male	Male, female?
C20754	Hunn, Fredrikstad, Viken	1	EIA		Cremation containing burnt human bones; no information about context.	Two adult females	Unknown
C20755	Hunn, Fredrikstad, Viken	14	Unknown		Cremation containing burnt human bones; no information about context.	Adult male	Unknown
C21508	Store Dal, Viken	6	EIA	MP	Mound with ash layer, burnt human bones. Bucket-shaped pot, pottery vessel type R. 361, small clay cup, silver fittings, bronze fragments, comb.	Adult male	Unknown
C21556	Store Dal, Viken	2	EIA		Mound with ash layer, burnt human bones. Comb, fragments of bronze, fragments of pottery vessels, nails.	Unknown	Unknown
C21706	Tanum, Bærum, Viken	1	EIA	LRP	Mound with scattered burnt human and animal bones. Pottery vessels, types R. 368, 18R360, R. 364, pottery vessel with spout, fragments of a green glass cup.	Adult, unknown	Unknown
C21850	Vinje, Vestfold og Telemark	1	Unknown	Unknown	Large collection of burnt human bones, no info about context.	Adult male	Unknown
C21927	Bjerknes, Sigdal, Viken	2	EIA	MP	Mound with ash layer, burnt human and animal bones. Iron knife, iron fittings, three whetstones, comb, flint piece.	Adult male	Unknown

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C21945	Ø. Egeland, Kvinesdal, Agder	7	EIA	MP	Mound with burnt human and animal bones deposited in a cauldron type R. 353. Pottery vessel type R. 369, comb, bone knife. Bear claws with cutmarks.	Unknown	Unknown
C21957	Ski, Rakkestad, Viken	1	EIA	RP	Collection of burnt human and animal bones. No info about context.	Adult male	Unknown
C22123	Stor-Stav, Ringsaker, Innlandet	2	EIA		Mound with ash layer, two assemblages of burnt human bones. Rounded bone pin, iron lock, fragment of iron bands and iron pins, slate whetstone.	Adult, unknown	Female
C22136	Løiten, Innlandet	5	Unknown		Mound with ash layer, burnt human and animal bones. Slate whetstone, knapping stone, piece of flint.	Adult, unknown	Unknown
C22231	Vennolum, Gran, Innlandet	2	EIA	RP	Damaged grave. Bronze cauldron (type R. 352), filled with burnt human bones and a bronze shield boss, bronze fittings for a shield handle (type R. 222), various fittings, bronze belt-end fittings, fragments of bronze/tin belt buckle, two spears, iron band and handle belonging to the cauldron. Beside the cauldron, a double-edged sword was deposited.	Not analysed	Male
C22466	Sande, Sem, Vestfold og Telemark	1	EIA		Mound with ash layer, burnt human bones. Beak-shaped brooch, bronze belt-end fittings, fragments of comb, bronze fragments, equal-armed brooch.	Adult male	Female
C22767	Gile, Innlandet	1	EIA		Mound with ash layer, burnt human and animal bones. Bronze celt, comb, stone spindle whorls.	Adult male	Male/female?
C23256	Voldhaugen, Søgne, Agder	9	EIA	MP	Damaged mound with stone chamber, containing a bronze cauldron type R. 353, filled with burnt human and animal bones, comb, two gaming pieces, iron handle, fittings and nails. The bones were wrapped in felt and bear pelt.	Two adults (one younger, one older), unknown gender	Unknown
C23295	Gjevre, Nordre Land, Innlandet	1	EIA	LRP	Mound with scattered, cleaned cremated human and animal bones. Equal-armed brooch, bronze fibula, two bronze needles, two gold spiral finger rings, two iron knives, fragment of curved knife, iron fittings for a wooden container, bone spindle whorls, bone pin, iron nails.	Adult female, adult of unknown gender	Female

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C23928	Søgne, Agder	13	EIA	RP	Mound with a small cairn built up around a cauldron, which was deposited on a flat stone slab. The cauldron was filled with burnt human bones, a bone pin, and comb. Cutmarks on the adult skeletal remains.	Adult male, infans II	Unknown
C25078	Gvarv, Sauherad, Vestfold og Telemark	1	EIA	Unknown	Assemblage of burnt bones found under a stone slab; submitted find, not excavated.	Adult male	Unknown
C26307	Y. Vatne, Hægebostad, Agder	3	EIA	MP	Mound with ash layer, covered by a layer of birch bark. Small amounts of burnt human bone. Sherds of bucket-shaped pot and type R. 361, fragments of a comb and 12 gaming pieces, silver ring, bronze belt buckle, fragment of a brooch, iron fragments, animal tooth.	Adult, unknown.	Female
C26398	Birkeland, Agder	2	EIA	RP	Mound with cauldron (type R. 352), covered with birch bark and a stone slab. Cauldron filled with cleaned, burnt human bones with cutmarks, a silver fibula (type R. 231), a bronze fibula, a bone comb.	Adult male	Female
C26791	Veinstein, Askim, Viken	5	Unknown		Submitted find; no information about context. Iron spear, pottery sherds, burnt human bones.	Adult, unknown	Unknown
C27077	Raknehaugen, Ullensaker, Viken	1	EIA		Burnt bones, unidentifiable.	Unknown	Unknown
C28980	Hunn, Borge, Viken	1	EIA	RP	Mound with multiple burials. C28980 was deposited at the bottom layer. Bronze cauldron type R. 352, filled with burnt human bones, two fragments of bronze stirrups, iron shield boss, fragments, or iron fittings, presumably for a shield, iron spear (type R. 207), iron spear (type R. 206).	Adult female, infans II	Unknown
C28985	Hunn, Borge, Viken	1	EIA		Mound with ash layer, six small silver balls, a small bronze ball, silver object, bronze needle, pottery sherds, flint flakes.	Adult, unknown	Female?
C28986f	Hunn, Borge, Viken	4	EIA	RP	Mound with several burials. The grave contained a gold berlock (type R. 2839), a comb (type R. 158), fragments of a spindle whorl, four small silver balls, a fragment of a silver pin.	Adult male	Unknown

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C28986g	Hunn, Borge, Viken	7	EIA	RP	Bone deposit from the same mound as above; no information about context.	Not analysed	Unknown
C28989m	Hunn, Borge, Viken	1	EIA		Burial pit containing a cruciform brooch, two small fibulas (type R. 243), a cruciform piece of bronze. Some iron and bronze fragments, fragments of a spindle whorl, pottery, belt buckle, iron rivet, six blue glass beads, burnt, cleaned bones.	Male?	Unknown
C28989q	Hunn, Borge, Viken	2	EIA		Assemblage of burnt bones; no information about context.	Unknown	Unknown
C29261	Åshaugen, haug 1, Sande, Vestfold og Telemark	2	EIA	RP	Mound with two burials. Spindle whorls, pottery sherds. Two assemblages of burnt bones containing bear claws (associated with the primary burial).	Unknown	Female?
C29262	Åshaugen, haug 3, Sande, Vestfold og Telemark	23	EIA		Mound with several burials. The bear claws came from the secondary burial, a cremation dug down in the upper part of the mound. Contained burnt human bone, four gaming pieces, two bone handles with ornaments, one of them probably of a knife, a bone pin, a comb, various ornamented bone pieces, a bronze fragment (possibly a small fibula).	Adult male	Female
C29265	Åshaugen, haug 5, Sande, Vestfold og Telemark	2	EIA	LRP	Disturbed mound containing a bird-shaped pottery vessel, a vessel type R. 360, many unidentified sherds. A small round, brown bead, a small iron handle, fragments of resin for birch bark container, burnt human and animal bones.	Adult male	Unknown
C29610	Evje, Agder	1	Unknown		No information about context. Fragments of milk teeth found together with a claw (wolf?).	Infans	Unknown
C29853	Ula, Viken	5	EIA	RP	Burial pit containing a pottery vessel with burnt bones. Five bear phalanges II and III.	Adult male	Unknown
C29859	Ula, Viken	8	EIA		Burial pit deposited under the stone circle around the mound, covered by a triangular stone. A pottery vessel contained burnt human bones and bones from a bear paw (8 phal. III, 8 phal. II., some metapodial fragments).	Unknown	Unknown

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C29860	Ula, Viken	6	EIA		Burial pit covered by a stone. The pit contained fragments of resin for an organic container made of wood or bark, pottery sherds, an iron ring, iron fragments, fragments of a sickle, two pieces of flint, a round stone (quartzite), burnt human bone.	Female	Unknown
C29861	Vanse, Lista, Agder	2	EIA	MP	Mound with stone chamber with an inhumation and a cremation to which the bear claws belonged. Cremation consisted of scattered burnt bones, two pottery vessels (type R. 361), an iron knife, fragments of a silver clasp, silver ring, knobs from a silver fibula, bronze needle container, fragments of comb, burnt human bones and some flint.	Two adult females	Female
C30149	Istrehågan, Larvik, Vestfold og Telemark	18	EIA		Boat-shaped stone setting with ash layer. Burnt human and animal bones, gaming pieces, several combs, whetstone, bone pin, push grinder.	Unknown	Female
C30491	Trålum, Fjære, Agder	2	EIA	MP	Mound with several burials. The bear claws belonged to a secondary cremation containing burnt human bones, a large and a small cooking vessel, three vessels with handle, two fragments of a comb, several ornamented bone fragments, five fragments of a bone pin.	Unknown	Female?
C31072	Opstad, Viken	5	EIA		Burial under stone setting, containing a large assemblage of burnt human bones, a pair of bronze tweezers, two bronze brooches, two iron needles, two combs, a whetstone, an assemblage of various pottery.	Unknown	Female
C31074	Opstad, Viken	20	EIA		Mound with a stone monument on top. Primary burial: ash layer containing several bronze fittings, ornated bronze plates, fragments of silver knobs from a fibula, fragments of a comb, a rounded vessel and a miniature vessel.	Unknown	Female
C31075	Opstad, Viken	1	EIA		Disturbed mound, containing burnt bones and some unidentified bone objects.	Male	Unkown
C32693	Eltdalen nordre, Trysil, Innlandet	13	LIA	MVP	„Mountain/hunter's burial", containing burnt human bones and dog bones, a sword-knife, a spear, 10 arrowheads, belt fittings, a celt, a file, three knives, a saw, a whetstone, a flint pebble, a comb, a ring made of antler or horn, various horn fragments.	Not analysed	Male

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C32757	Store Tune, Tune, Viken	13	EIA		Primary burial in a mound containing a pottery vessel with a long neck, belt fittings, fragments of green, smelted glass, 10 gaming pieces, a comb, two silver fragments.	Infans II	Unknown
C34549	Lardal, Vestfold og Telemark	10	EIA		Disturbed mound with two burials. The primary burial contained three pottery vessels placed in a thick charcoal layer. The burnt bones (from several individuals) were partly deposited in one of the vessels but also scattered in the charcoal layer.	Adult female; young individual of unknown gender	Unknown
C34692	Kathrineborg, Brunlanes, Vestfold og Telemark	13	EIA		Mound with burial containing several round bone pins, five blue beads, sherds from several pots, resin for several birch bark containers, burnt human bones.	Adult male	Female
C34814	Tingelstad, Gran, Innlandet	5	LIA	MVP	Mound containing an iron cauldron, burnt human bones, fragments of several combs, fragments of a bronze fibula or fittings, decorated with an eagle, a pair of tweezers. Later investigations have revealed a one-edged knife, presumably a weapon-knife, which might indicate that this is a double burial (I. M. Røstad, pers. comm.).	Not analysed	Female?
C34884a	Fuskeland, Mandal, Agder	11	EIA		Mound with three burials. Burial I contained burnt human bones and bear claws.	Adult male	Unknown
C34884f	Fuskeland, Mandal, Agder	4	EIA		Mound with three burials. The bear claws belonged to Burial II, an organic container filled with burnt bones, 14 fragments of gaming pieces and 15 comb fragments.	Adult male	Unknown
C35042	Manvik, Brunlanes, Vestfold og Telemark	5	EIA	MP	Disturbed mound containing a cauldron filled with large amounts of burnt human and animal bones, two fragments of a bone arrowhead, fragments of bone artefacts, probably gaming pieces and a comb, sherds of a bucket-shaped pot.	Adult male	Male
C35109	Skjervum øvre, Gran, Innlandet	2	EIA	RP	Mound with ash layer containing a spiral ring of bronze, a bronze ring, a needle container or shaft of bronze, fragments of bronze fittings and various fragments of bronze. Comb and round bone pin, pottery sherds, burnt flint piece, an unburnt tooth (horse?).	Unknown	Female
C35237	Berg, Brunlanes, Vestfold og Telemark	6	Bronze Age		Pit with no marking above ground, containing burnt human bones, resin from an organic container, and bear claws. Uncertain dating; assumed: Bronze Age.	Unknown	Unknown

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C35805	Gaalaas, Ringsaker, Innlandet	1	EIA		Disturbed mound, the primary burial was a richly furnished female inhumation. Structures with burnt bones and artefacts were scattered in and under the mound. The bear claws belonged to scatter llll.	Unknown	Unknown
C35844	Fjære, Fevik, Agder	1	EIA		Burial in a pit under a stone circle with burnt human bones. Green glass bead, shaped like a ring, two blue glass beads, fragments of green glass, fragments of a smelted silver object, pottery sherds, flat and round fragments of bronze, iron piece with a bronze nail, fragments of a bone pin, fragments of ornated bone, possibly a comb. Fragment of bear claw with a drilled hole.	Adult male (identified as such by P. Holck, 22.01.1983).	Unknown
C35859	Landvik, Grimstad, Agder	6	EIA	MP	Disturbed burial, with min. two burials. The cremation contained a cruciform fitting of gilded bronze, a fibula (type Shetelig 1912, fig. 37), white glass bead shaped like a ring, 15 narrow iron tubes, fittings for textiles, fragments of comb.	Unknown	Female
C36400	Evje, Agder	8	EIA		New objects from mound previously catalogued under C34327 and C34328. Contained burnt human bones, glass cup, pottery sherds, fragments of iron and bronze, nine gaming pieces, two dice, a comb, resin from an organic container.	Unknown	Unknown
C36679	Revøy Midtre, Lyngdal, Agder	1	EIA		Mound with ash layer, containing burnt human bones, a simple bronze fibula, bronze belt buckle, bronze fittings, a pottery vessel with handle, pottery sherds, nine gaming pieces, two dice, comb.	Adult female	Female
C37631k	Bratsberg, Skien, Vestfold og Telemark	2	EIA	ERP	Mound with several burials. Grave I: a scatter containing a burnt human bone, a bronze fibula, comb, a bone pin, spindle whorls, bone arrowheads, pottery sherds, resin from an organic container.	Unknown	Male/female?
C37631q	Bratsberg, Skien, Vestfold og Telemark	15	EIA	ERP	Mound with several burials, see above. Grave II: an ash layer at the bottom, containing a comb, a bronze container, a knife.	Unknown	Unknown
C38506	Berg Skole, Halden, Viken	4	EIA		Mound containing a glass cup, belt buckle and belt fittings of bronze, iron needle, several pottery vessels, comb, flint strike-a-light, whetstone.	Unknown	Female
C52083	Aas Østre, Sande, Vestfold og Telemark	1	EIA	RP	Mound with two burials. The bear claws belonged to a secondary cremation, a birch bark container with burnt human bones, several pottery vessels, fragments of gold jewellery, fragments of a fibula, several glass beads.	Adult female (Bones analysed by P. Holck, 24.11.1998)	Female

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
C52092	Bøli, Råde, Viken	10	EJA	PRIA	An imported bronze pan used as urn. It contained burnt human bones, a folded single-edged sword, scabbard fittings, a lancehead, a spiked shield boss, a plain golden finger ring, claws from at least two bear paws, and a pair of slender knife blades (cf. Martens 2008, 309).	Not analysed	Male
C55949	Molle østre, Spydeberg, Viken	1	EIA	RP	Burial pit marked by a stone. Burnt human bones from a young individual and an ornamented bone pin. Dated to 240–420 CE (Beta Analythic Inc., Lab. no. 227486).	Adult, unknown gender (Bones analysed by H. Fyllingen, 2006)	Female
C56077	Rødbøl, Vestfold og Telemark	3	EIA		Burial pit containing human bones from two individuals, a pottery vessel with spout, resin from an organic container.	Adult; Infans II (bones analysed by P. Holck)	Unknown
C58714	Veien kultur-minnepark, Viken	1	EIA		Mound with several burials. The bear claws were found with scattered burnt human bones and pottery under a flat stone.	Adult, unknown gender	Unknown
C60497	Fet, Viken	6	EIA	MP	Burial pit, presumably covered by a mound removed by ploughing. Human and animal bones, several gaming pieces (cf. Ødegård 2017).	Adult female	Unknown
C61166	Dilling, Viken	10	EIA	PRIA	Burial ground located close to a cluster of houses dated to the Pre-Roman Iron Age. The pit contained burnt human bones and bear claws (cf. Ødegård et al. 2017).	Adult, unknown gender	Unknown
B3358	Borgund Ø, Vestland	16	EIA	RP	Mound with several burials; the primary one represented by a cauldron covered by a slab and a small cairn, containing burnt human bones, bird bones, comb, ornamented bone plate, a Roman gold coin used as a pendant. Inside the cauldron: traces of resin and birch bark. Another structure contained pottery, a smelted silver brooch with spiral and dragon ornaments, a bronze ring, bronze fittings, iron nails and unidentified iron fragments, unburnt horse bones/teeth.	Not analysed	Female
B3855	Øvrabø Søre, Kvinnherad, Vestland	9	EIA		No information.	Not analysed	Unknown
B4003	Sogn, Vestland	3	EIA		Mound with chamber containing an iron cauldron placed on a slab. Cauldron filled with burnt bones, fragments of a comb, a green glass bead. Inside the bottom of the cauldron decoration in form of a hexagonal star surrounded by two incised double circles.	Not analysed	Unknown

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
B4095	Eide, Fjælberg, Vestland	2	EIA		Mound with a stone chamber, containing a bucket-shaped pot, filled with large amounts of burnt bones, sand and charcoal, bronze rivets, comb fragments.	Not analysed	Unknown
B4207	Jondal, Hardanger, Vestland	6	EIA		Mound with a small stone chamber containing a cauldron (type R. 352), wrapped in birch bark, filled with burnt bones, min. 15 gaming pieces, two bone pins, two combs, a small bone plate, a piece of glass, fragments of teeth.	Not analysed	Female
B4259	Naustdal i Søndfjord, Vestland	1	EIA		Mound with a kernel of stone surrounding an assumed wooden chamber containing a cauldron (type R. 352) filled with burnt bones, gaming pieces, pottery, fragments of birch bark, a piece of pyrite used for making fire.	Not analysed	Unknown
B4367	Alne, Vikevik, Vestland	5			Mound with a scatter of burnt bones and fragments of a comb.	Not analysed	Unknown
B4591	Gloppen, Vestland	4	EIA		Mound with pyramid-shaped chamber, burnt human bones. Bronze fibula type R. 247, fragments of a comb and another bone artefact, fragment of resin, fragment of wooden bucket (perhaps not part of the burial).	Not analysed	Female
B4593	Evebø, Gloppen, Vestland	2	EIA		Mound with stone chamber, burnt human and animal bones. Pottery (types R. 367 and 369), iron fragment, fragments of a comb, clay spindle whorls.	Not analysed	Female
B4866	Etne, Vestland	1	EIA		Mound with urn covered by stones and a slab on top. Pottery vessel type R. 363 with burnt bones, no artefacts.	Not analysed	Unknown
B4877	Kvam, Vestland	1	EIA		Mound (cairn) with a cauldron (type R. 352) placed in an opening between stones, on top of a birch bark layer covered by a slab. The cauldron was filled with burnt bones and pieces of birch bark.	Not analysed	Unknown
B4978	Vinnes, Fuse, Vestland	1	Unknown		Cairn with a small stone chamber, containing burnt bones, and an iron fragment.	Not analysed	Unknown
B5060	Spangereid, Vestland	1	EIA		Submitted find, uncertain context. Silver buckle with animal heads, two gilded knobs of fibulas, fragments from two bucket-shaped pots and several pots with handles, some unburnt human and animal bones (horse?), flint blade.	Not analysed	Female

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
B5693	Voss, Vestland	4	EIA		Disturbed mound with small square stone chamber, covered by a slab. Contained sherds of a bucket-shaped pot and burnt bones. Other artefacts may have been removed from the grave.	Not analysed	Unknown
B5838	Etne, Vestland	2	EIA		Disturbed mound with small stone chamber. In the chamber, a bucket-shaped pot filled with burnt bones, placed on top of a charcoal layer. Fragments of bone objects, probably pins, a fragment of a round bone pin.	Not analysed	Female
B5931	Kvinnherad, Vestland	4	EIA	LRP	Mound with ash layer at the bottom and cremation deposit, both belonging to the same burial. Contained large assemblage of burnt bones, a gold finger ring with a serpent head terminal, fragments of a bronze chain, a bronze needle, at least six smelted beads, a round bone pin (type R. 277), fragments of flat bone pins, fragments of a comb, bone plate with ornaments, curved knife, an iron pole, some iron nails and fittings. Fragments of min. three pottery vessels (one bucket-shaped and one with handle), slate whetstone.	Not analysed	Female
B5963	Rimbereid, Fitje, Vestland	5	EIA	RP	Partly disturbed mound with a low chamber consisting of a long slab resting on stones at the ends. Under the slab an ash layer with burnt bones, sherds from at least two pottery vessels, comb, three dice, nine gaming pieces.	Not analysed	Unknown
B6086	Manger, Vestland	2	EIA	MP	Mound with a small stone chamber, a cauldron filled with burnt bones, and fragments of a bone comb.	Not analysed	Unknown
B6103	Kvinherad, Vestland	?	EIA	MP	Mound with complex stratigraphy. In a small room covered by a slab was an assemblage of cleaned burnt bones, wrapped in birch bark. In the layer below a small drop of smelted gold, fragments of a bronze plate, a bronze needle, a piece of smelted bronze, fragments of a comb and smelted glass, burnt bones from a small mammal. Number of claws not noted.	Not analysed	Female
B6111	Luster, Sogn, Vestland	11	EIA	MP	Mound with finds of an iron plate, iron fitting with a bullet-shaped head, iron fragments, large pottery vessel with two handles, burnt bones, fragments of a comb, a gaming piece (type R. 177), fragments of a thin bone plate, ornamented at both sides.	Not analysed	Unknown
B6197	Stryn, Vestland	2	EIA	RP	Disturbed mound. Submitted find. Cauldron (type R. 352) placed on a stone slab beside a large boulder, surrounded by a layer of birch bark. Burnt bones, no artefacts.	Not analysed	Unknown

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Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
B6200	Etne, Vestland	?	EIA	RP	Mound (cairn) with several burials. Grave II: ash layer, covered by slabs, containing burnt human bones and bear claws, a strike-a-light, an oval pebble of reddish quartzite with use wear, two flat bone pins, fragments of a round bone pin, a comb and an unidentified bone tool, possibly a meat knife. Sherds of pottery, type R. 360. Number of claws not noted.	Not analysed	Female
B6233I	Etne, Vestland	7	EIA		Mound with several cremations. The primary one was a cauldron wrapped in birch bark and filled to the brim with burnt human bones, with fragments of a comb.	Not analysed	Unknown
B6233IIa	Etne, Vestland	6	EIA		Mound with several ash layers with burnt bones and artefacts. Grave IIa was located north of the cauldron, and contained sherds of a bucket-shaped pot, resin from a wooden container, fragments of a comb.	Not analysed	Unknown
B6475	Vangen, Voss, Vestland	?	EIA	MP	Disturbed mound, built around a boulder, with an ash layer containing a small round red bead, fragments of a comb and a gaming piece (type R. 177), two iron arrowheads, fragments of iron, pottery sherds from a bucket-shaped pot and a pot with handle. Number of claws not noted.	Not analysed	Male
B6539	Stryn, Vestland	6	EIA		Mound with a large stone chamber, filled with a gravel layer and containing unburnt bones, wood, and teeth (probably horse), but no artefacts. At the outskirt of the mound a cauldron lined with felt, filled with a large assemblage of burnt bones and artefacts: fragments of two glass cups, types R. 337 and R. 338c, fragments of several combs and two gaming pieces, covered by a slab. The bones were wrapped in birch bark, the package was tied together with a ribbon of bast.	Not analysed	Unknown
B6597	Ullensvang, Vestland	7	EIA	MP	Small mound with a cauldron (type R. 353) covered by a slab. The cauldron was surrounded by a layer of charcoal and burnt bones; it was filled with burnt human and animal bones (some identified as sheep/goat), a knob from a bronze fibula, a bronze fragment from another brooch, a belt ring of bronze, fragments of two or three combs, a bone knife (type R. 450), two quartz crystals.	Not analysed	Female
B6691	Vik, Vestland	25	EIA	MP	Mound with large stone chamber, three cremations. The bear claws belonged to a cremation placed on top of the primary inhumation. Large assemblage of burnt bones, two combs, four bone pins, a bone plate (possibly a knife), bone arrowheads, fragments of burnt bronze.	Not analysed	Male and female?

Cont. Appendix 1 ▶

Cont. Appendix 1

Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
B6700	Tysnes, Vestland	17	EIA	MP	Mound with a simple urn filled with large amounts of burnt human and animal bones (some identified as bird), fragments of smelted silver, fragments of a comb, fragments of a bone spoon, and fragments of a bone knife with runic inscriptions.	Not analysed	Unknown
B6756k	Mundheim, Strandebarm, Vestland	10	EIA	MP	Large mound with one inhumation and three cremations. The bear claws belonged to the primary burial, Grave 3, which was a combination of ash layer and stone chamber. Among the burnt bones were fragments of a comb, three bone dice (type R. 176), one cubic bone die, eight gaming pieces, small fragments of smelted bronze and two sherds of a bucket-shaped pot.	Not analysed	Unknown
B6756h	Mundheim, Strandebarm, Vestland	1	EIA	MP	Grave 4 in the mound, a secondary cremation placed over Grave 3 at the outskirts of the mound. The burnt bones were probably deposited in a wooden bucket with traces of resin and iron fittings, several bone pins, a comb, bone fragments (possibly a knife), and sherds of a bucket-shaped pot.	Not analysed	Female
B6763	Ulvik, Hardanger, Vestland	5	EIA	MP	Mound with stone chamber, containing large amounts of burnt bones, fragments of a comb, two flat bone pins, a drilled plate of bone, fragments of a bone knife, some drops of smelted bronze, some pottery sherds, tar for a wooden container.	Not analysed	Female
B6807	Norheim, Kvam, Vestland	9	EIA	MP	Mound built around a low stone hill containing an ash layer covered by slabs. Together with the burnt bones there were small lumps of smelted bronze, smelted blue glass, an iron needle, hook and awl, iron nails. Fragments of a comb, four bone pins, fragments of an ornamented bone knife, iron celt, pottery sherds.	Not analysed	Female
B7608	Vangen, Voss, Vestland	3	EIA	MP	Disturbed mound with stone chamber containing cleaned burnt bones, an oval bronze belt buckle, an iron fragment (knife?), two fragments of a comb.	Not analysed	Unknown
B7908	Støle, Etne, Vestland	7	EIA	MP	Mound with a stone chamber covered by charcoal, presumably from a fire on top of the grave. Floor layer was also burnt. Burnt human and animal bones (one pig tooth identified) scattered in the chamber and the charcoal layer. One bucket-shaped pot, one vessel with handle, one rounded vessel. 21 gaming pieces (type R. 177), fragments of a comb.	Not analysed	Unknown

Cont. Appendix 1 ▶

Cont. Appendix 1

Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
B7956	Støe, Etne, Vestland	3	EIA	RP	Mound with long stone chamber, cauldron type R. 353 placed on top of a slab deposited in a layer of birch bark. An ash layer was stretching outside the chamber. Six pottery sherds from two vessels, some slag and burnt hazelnut shells.	Not analysed	Unknown
B8200	Kinsarvik, Ullensvang, Vestland	7	EIA	MP	Mound with long stone chamber, containing burnt bones, a bronze brooch, a knob from a cruciform brooch, a drop of smelted silver, fragments of a comb and gaming pieces (type R. 177), sherds of bucket-shaped pots, a belt stone of grey/white quartzite (type R. 155).	Not analysed	Female
B8697	Eknes, Hosanger, Vestland	9	EIA		Mound with square stone chamber. Gaming pieces and burnt bones were placed on a slab and covered by soil and another slab. East of the chamber an ash layer containing more burnt bones, gaming pieces and claws.	Not analysed	Unknown
B8853	Oppedal, Lavik, Vestland	12	EIA	MP	Large mound with a stone chamber containing burnt bones, fragments of bone pin, faceted glass cup, fragments of a bucket-shaped pot, fittings from a wooden bucket, birch bark used as lid, possibly also as wrap for the wooden container.	Not analysed	Unknown
B8871	Haram, Sunnmøre, Vestland	14	EIA	MP	Disturbed mound with stone chamber, containing fragments of a comb and burnt bones.	Not analysed	Unknown
B8872	Haram, Sunnmøre, Vestland	8	EIA	MP	Ash layer under stone circle, containing burnt bones, pottery sherds, fragments of a comb, a large amount of bone arrowheads, two gaming pieces, fragments of burnt glass and bronze, resin and iron handles from a wooden container, strike-a-light stone of quartzite.	Not analysed	Male
B8983	Hamre, Leikanger, Vestland	12	EIA	MP	From mound 6333. Cauldron placed in a stone chamber, contained burnt and unburnt human and animal bones, a glass cup, a solidus (Theodosius I), two combs (type R. 159), bronze fragments, pottery sherds, fragments of birch bark.	Not analysed	Unknown
B10042	Uggdal, Tysnes, Vestland	7	EIA		Disturbed mound built around a boulder. Burnt bones and pottery sherds in red-burnt layer of clay.	Not analysed	Unknown
B10097	Indre Vereide, Gloppen, Vestland	3	EIA		Pit found in the lower layers of a big mound, containing cleaned burnt bones, fragments of a comb.	Not analysed	Unknown

Cont. Appendix 1 ▶

Cont. Appendix 1

Museum no.	Site/region	Claws	Period	Phase	Description of burial and finds	Sex/age (mainly after Holck 1986)	Gender (acc. to grave goods)
B10790	Giske, Borgund, Vestland	18	EJA		Mound with a cremation and an inhumation (previously B 894–B 900, re-catalogued). The bear claws belonged to the cremation, containing two bronze cauldrons (type R. 353), a ring of gold, smelted drops of gold, silver and bronze, various fittings, tacks and tubes of bronze, two dice, fragments of gaming pieces (type R. 177), and a comb, pottery, snail shell (*Patella vulgata*), burnt human and animal bones, unburnt bird bones, a fragment of birch bark with seam, probably a cover for the cauldron.	Not analysed	Unknown
B11546	Giske, Summøre, Vestland	8	EIA	LRP	Mound with stone chamber, cauldron filled with burnt human and animal bones (some identified as goat/sheep), a gold medallion (copy of a Roman emperor medallion with animal figures). Payment-ring and tack of silver, two silver cups, bronze fragments, fragments of a comb, five bone arrowheads, pottery, iron rivets.	Not analysed	Male
B12046	Gjerstad, Voss, Vestland	3	EIA		Mound with circular ash layer at the bottom, surrounded by stones. Burnt human and animal bones (some identified as bird) and artefacts scattered in the layer. Fragment of a bronze fibula, bronze ribbon, several bronze fittings, some of them presumably for a wooden bucket. Fragments of 46 gaming pieces, fragments of a comb and smelted green glass. Nails and ribbon of silver. Iron buckle with needle. Bear and bird claws.	Not analysed	Female
B12048	Haram, Sunnmøre, Vestland	15	EIA	LRP	Disturbed mound, artefacts not in situ except a fingerring of gold placed on a flat stone. A bronze plate, with burnt bones and artefacts, had been wrapped in skin and placed on an ash layer at the bottom of the grave. An armring and three fingerrings of gold, a double bracteate, with Roman emperor portrait on both sides. Fragments of glass, comb, gaming pieces, a piece of skin with a visible seam and brown animal hair (a pouch or bag?), birch bark, flint strike-a-light.	Not analysed	Unknown
B13367	Ullensvang, Vestland	1	EIA		Disturbed mound with a stone chamber, small amount of burnt bones.	Not analysed	Unknown
B13955	Kvåle, Sogndal, Vestland	4	EIA	MP	No information about context. Animal head from the foot of a cruciform bronze brooch, bronze buckle, fragment of silver fibula, bronze fragments, smelted silver, belt stone of quartz/quartzite, iron rivets and nails, bucket-shaped pottery and pottery with a handle, ornamented bone plate, a large amount of gaming pieces, ornamented bone piece, flint strike-a-light.	Not analysed	Female
B13956	Kvåle, Sogndal, Vestland	11	EIA		No information about context. Fragments of a bone comb and burnt human bones.	Not analysed	Unknown

Appendix 2. Sites with catalogue numbers and coordinates.

Coordinate system	East	North	Catalogue no.	Site
EU89-UTM, zone 32	556973	6592360	C959	Fossum
EU89-UTM, zone 32	404371	6434491	C2707	Halsa
EU89-UTM, zone 32	527510	6561698	C4941	Solum
EU89-UTM, zone 32	602810	6725525	C5578	Kraby
EU89-UTM, zone 32	476288	6469547	C7340	Fjære
EU89-UTM, zone 32	476288	6469547	C7353	Fjære
EU89-UTM, zone 32	391908	6456399	C8999	Lyngdal
EU89-UTM, zone 32	432042	6492732	C11092	Evje verk, Evja
EU89-UTM, zone 32	517514	6591699	C17305	Sauherad
EU89-UTM, zone 32	517514	6591699	C17342	Sauherad
EU89-UTM, zone 32	616441	6573868	C19172	Opstad
EU89-UTM, zone 32	602651	6571407	C20755	Hunn
EU89-UTM, zone 32	615916	6738448	C20314	Arstad, Stange
EU89-UTM, zone 32	602651	6571407	C20754	Hunn
EU89-UTM, zone 32	620367	6567069	C21508	Store Dal
EU89-UTM, zone 32	620367	6567069	C21556	Store Dal
EU89-UTM, zone 32	582757	6640758	C21706	Tanum, Bærum
EU89-UTM, zone 32	440424	6609213	C21850	Vinje
EU89-UTM, zone 32	536606	6671933	C21927	Bjerknes, Sigdal
EU89-UTM, zone 32	382643	6466676	C21945	Ø. Egeland, Kvinesdal
EU89-UTM, zone 32	635476	6584817	C21957	Ski, Rakkestad
EU89-UTM, zone 32	599317	6749511	C22123	Stor-Stav, Ringsaker
EU89-UTM, zone 32	627337	6745832	C22136	Løiten
EU89-UTM, zone 32	588971	6691915	C22231	Vennolum, Gran
EU89-UTM, zone 32	581786	6572244	C22466	Sande, Sem
EU89-UTM, zone 32	601952	6729049	C22767	Gile
EU89-UTM, zone 32	427385	6438336	C23256	Voldhaugen, Eik, Søgne
EU89-UTM, zone 32	556759	6749280	C23295	Gjevre, Nordre Land
EU89-UTM, zone 32	427385	6438336	C23928	Søgne
EU89-UTM, zone 32	511063	6582896	C25078	Gvarv, Sauherad
EU89-UTM, zone 32	395296	6467162	C26001	Snartemo
EU89-UTM, zone 32	390707	6481678	C26307	Y. Vatne, Hægebostad
EU89-UTM, zone 32	455041	6466985	C26398	Birkeland
EU89-UTM, zone 32	622619	6607986	C26791	Veinstein, Askim
EU89-UTM, zone 32	618659	6669694	C27077	Raknehauge, Ullensaker
EU89-UTM, zone 32	617741	6566553	C28980	Hunn, Borge
EU89-UTM, zone 32	617741	6566553	C28985	Hunn, Borge
EU89-UTM, zone 32	617741	6566553	C28986	Hunn, Borge
EU89-UTM, zone 32	617741	6566553	C28989	Hunn, Borge
EU89-UTM, zone 32	568179	6608234	C29261	Åshaugen, haug 1, Sande
EU89-UTM, zone 32	568609	6608020	C29262	Åshaugen, haug 3, Sande
EU89-UTM, zone 32	568179	6608234	C29265	Åshaugen, haug 5, Sande
EU89-UTM, zone 32	432042	6492732	C29610	Evje

Cont. Appendix 2 ▶

Cont. Appendix 2

Coordinate system	East	North	Catalogue no.	Site
EU89-UTM, zone 32	611872	6568957	C29853	Ula
EU89-UTM, zone 32	611872	6568957	C29859	Ula
EU89-UTM, zone 32	611872	6568957	C29860	Ula
EU89-UTM, zone 32	366392	6443470	C29861	Vanse, Lista
EU89-UTM, zone 32	567266	6551420	C30149	Istrehågan, Larvik
EU89-UTM, zone 32	481181	6471550	C30491	Trålum, Fjære
EU89-UTM, zone 32	616286	6573944	C31072	Opstad
EU89-UTM, zone 32	274588	6579365	C31072	Opstad
EU89-UTM, zone 32	6820130	655821	C32693	Eltedalen nordre, Trysil
EU89-UTM, zone 33	618239	6574479	C32757	Store Tune, Tune
EU89-UTM, zone 32	556224	6577531	C34549	Lardal
EU89-UTM, zone 32	558155	6540666	C34692	Kathrineborg, Brunlanes
EU89-UTM, zone 32	574095	6694451	C34814	Tingelstad, Gran
EU89-UTM, zone 32	411850	6441834	C34884	Fuskeland, Mandal
EU89-UTM, zone 32	553049	6540346	C35042	Manvik, Brunlanes
EU89-UTM, zone 32	587001	6693524	35109	Skjervum øvre, Gran
EU89-UTM, zone 32	554644	6542121	C35237	Berg, Brunlanes
EU89-UTM, zone 32	604788	6741921	C35805	Gaalaas, Ringsaker
EU89-UTM, zone 32	482168	6469853	C35844	Fjære, Fevik
EU89-UTM, zone 32	472057	6467007	C35859	Landvik, Grimstad
EU89-UTM, zone 32	432042	6492732	C36400	Evje
EU89-UTM, zone 32	381979	6433072	C36679	Revøy Midtre, Lyngdal
EU89-UTM, zone 32	535813	6562686	C37631	Bratsberg, Skien
EU89-UTM, zone 32	631716	6554525	C38506	Berg Skole, Halden
EU89-UTM, zone 32	568529	6606020	C52083	Aas Østre, Sande
EU89-UTM, zone 32	615654	6609151	C55949	Molle østre, Spydeberg
EU89-UTM, zone 32	563133	6551928	C56077	Rødbøl
EU89-UTM, zone 32	567937	6671566	C58714	Veien kulturminnepark
EU89-UTM, zone 32	622727	6646210	C60497	Fet
EU89-UTM, zone 32	596293	6585712	C61166	Dilling
EU89-UTM, zone 32	313530	6774825	B520-525	Nedre Aure, Voss
EU89-UTM, zone 32	313449	6623845	B3358	Borgund Ø
EU89-UTM, zone 32	313407	6624873	B3855	Øvrabø Søre, Kvinnherad
EU89-UTM, zone 32	293226	6726757	B4003	Sogn
EU89-UTM, zone 32	320111	6611238	B4095	Eide, Fjælberg
EU89-UTM, zone 32	349869	6684063	B4207	Jondal, Hardanger
EU89-UTM, zone 32	322777	6823213	B4259	Naustdal i Søndfjord
EU89-UTM, zone 32	306941	6611587	B4367	Alne, Vikevik
EU89-UTM, zone 32	392258	6456026	B4414	Vemmestad, Lyndal
EU89-UTM, zone 32	353503	6851773	B4590	Evebø, Gloppen
EU89-UTM, zone 32	353176	6850969	B4591	Gloppen
EU89-UTM, zone 32	353176	6850969	B4593	Evebø, Gloppen
EU89-UTM, zone 32	330994	6616115	B4866	Etne

Cont. Appendix 2 ▶

Cont. Appendix 2

Coordinate system	East	North	Catalogue no.	Site
EU89-UTM, zone 32	399449	6792315	B4877	Kvam
EU89-UTM, zone 32	310143	6673928	B4978	Vinnes, Fuse
EU89-UTM, zone 32	394520	6479271	B5060	Spangereid
EU89-UTM, zone 32	357819	6724655	B5693	Voss
EU89-UTM, zone 32	331416	6616771	B5838	Etne
EU89-UTM, zone 32	334226	6661065	B5931	Kvinnherad
EU89-UTM, zone 32	294794	6646764	B5963	Rimbereid, Fitje
EU89-UTM, zone 32	288888	6727308	B6086	Manger
EU89-UTM, zone 32	329236	6645762	B6103	Kvinnherrad
EU89-UTM, zone 32	405931	6800926	B6111	Luster, Sogn
EU89-UTM, zone 32	381627	6865823	B6197	Stryn
EU89-UTM, zone 32	334386	6622949	B6200	Etne
EU89-UTM, zone 32	353538	6723923	B6227	Voss
EU89-UTM, zone 32	455118	6946107	C6233	Grindheim, Etne,
EU89-UTM, zone 32	455118	6946107	C6233	Grindheim, Etne
EU89-UTM, zone 32	353358	6725790	B6474	Vangen, Voss
EU89-UTM, zone 32	353358	6725790	B6475	Vangen, Voss
EU89-UTM, zone 32	384143	6867426	B6539	Stryn
EU89-UTM, zone 32	370982	6690019	B6597	Ullensvang
EU89-UTM, zone 32	369748	6775051	B6691	Vik
EU89-UTM, zone 32	310776	6658142	B6700	Tysnes
EU89-UTM, zone 32	328340	6673724	B6756	Mundheim, Strandebarm
EU89-UTM, zone 32	328340	6673724	B6756	Mundheim, Strandebarm
EU89-UTM, zone 32	373564	6716993	B6763	Ulvik, Hardanger
EU89-UTM, zone 32	339289	6702238	B6807	Norheim, Kvam
EU89-UTM, zone 32	352659	6727940	B7608	Vangen, Voss
EU89-UTM, zone 32	328988	6620876	B7908	Støle, Etne
EU89-UTM, zone 32	331714	6620387	B7956	Støe, Etne
EU89-UTM, zone 32	365076	6697137	B8200	Kinsarvik, Ullensvang
EU89-UTM, zone 32	305595	6723855	B8697	Eknes, Hosanger
EU89-UTM, zone 32	313530	6774825	B8853	Oppedal, Lavik
EU89-UTM, zone 32	346900	6939438	B8871	Haram, Sunnmøre
EU89-UTM, zone 32	350908	6938963	B8872	Haram, Sunnmøre
EU89-UTM, zone 32	381080	6788322	B8983	Hamre, Leikanger
EU89-UTM, zone 32	304585	6654216	B10042	Uggdal, Tysnes
EU89-UTM, zone 32	349999	6856316	B10097	Indre Vereide, Gloppen
EU89-UTM, zone 32	352517	6933251	B10790	Giske, Borgund
EU89-UTM, zone 32	346941	6929699	B11546	Giske, Summøre
EU89-UTM, zone 32	357732	6950357	B12048	Haram, Sunnmøre
EU89-UTM, zone 32	368504	6684365	B13367	Ullensvang
EU89-UTM, zone 32	396701	6790381	B13955	Kvåle, Sogndal
EU89-UTM, zone 32	396701	6790381	B13956	Kvåle, Sogndal
EU89-UTM, zone 32	394520	6479271	B4234	Lundevågen, Vanse
EU89-UTM, zone 32	354056	6725855	B12046	Gjerstad, Voss

Bear skin burials revisited: Norway and Sweden, mainly Migration Period

By Oliver Grimm

Keywords: Norway, Sweden, burial archaeology, bear skin, Migration Period

Abstract: In the present paper, emphasis is laid upon burials with actual or assumed bear skins from northern Europe. This relates to mainly Migration Period inhumation burials in Norway and Sweden (AD 375/400 to 550/575), whereas other bear-related furnishings (frequently claws [or rather third phalanges], rarely teeth) found in northern and central European Iron Age graves will not be considered. All in all, there is a maximum of only 15 burials with bear skin remains known from Norway and Sweden (a few more from Finland notwithstanding). This is statistically meaningless, and each new find may change the entire picture (see postscriptum). Furthermore, most finds came to light in the second half of the 19th and the early 20th century – that is, in the early days of archaeology, using rather rough excavation techniques when compared to present-day standards. Against all odds, however, a closer look at the burials with bear skins leads to somewhat surprising insights into social and gender aspects. Some graves are among the richest of their time, in cases of both male individuals ("warriors") and one female. The oldest burial (160/180–325), one from Gotland, is also that of a female. Among the earliest of these graves in Norway (325–375/400), there is yet another one of a woman that is, quite remarkably, located in the far north of the country.

Introduction

The past decades have seen numerous scholarly attempts by archaeologists to draw upon burials with bear-related furnishings, mainly those with bear claws (or rather third phalanges: see below), in an attempt to discuss the "world view" expressed by those finds (see Mansrud, this volume, on different interpretations; see also Grimm 2013, 278; Kirkinen 2017, 5). Suffice it to say that the interpretation has a wide range. On the one hand, such skins are considered as the belongings of a "berserk" (e.g. Bender Jørgensen 2001, 7; 2003, 70–71; Hedeager 2011, 91–98; see also Wamers 2009 and Sundqvist, this volume), or the reflection of a heroic deed (the killing of a bear; cf. Oehrl 2013). On the other hand, skins may have served as trading goods (e.g. Petré 1980; Iregren 1988; Lindholm/Ljungkvist 2016) with a use as, *inter alia*, bedding or shrouds (e.g. Munksgaard 1959; Sigvallius 1994, 76; Henriksen 2001, 10). In this respect, it is also worth remembering that, in large parts of northern Europe (Denmark notwithstanding), bears had a "shared history" with human beings that surely had an influence on people's minds and, possibly, beliefs, whereas on Gotland bears were foreign, but claws are found so frequently in burials of that island that a trade in skins has been suggested (see Jordahl et al., this volume).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 533–546 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134348

There is a tendency in research to equate bear claws in burials uncritically with former bear skins. Single claws may very well represent former skins, but any such assumption remains hypothetical, because they cannot tell us anything, but preserved skins (hairs) and claw groups found in correct anatomical order are able to do so. The present paper, which to some extent revisits an older one (Grimm 2013), addresses only burials with actual or assumed bear skins, as known from Norway and Sweden, from a purely archaeological point of view. The burials in question, mainly Migration Period inhumations (375/400–550/575), were mostly excavated in the early days of archaeology in the 19th and early 20th century, using rather rough excavation techniques compared to present-day standards. The 15 graves with skins are statistically meaningless, since each new find may change the entire picture (Table 1; Fig. 1; cf. postscriptum). The situation is quite different for burials with bear claws; Gotland stands out with almost 150 (!) mainly Migration and Early Vendel Period interments to that effect (see Jordahl et al., this volume). However, other areas in Norway and Sweden have also yielded many graves with bear claws of Migration Period date, which allows a well-founded archaeological discussion and conclusion (see different papers, this volume), in contrast to speculation on the basis of only a few graves with skin remains. Important findings from Finland will not be considered in this paper – that is, some burials with bear hairs that date to the Late Iron Age and medieval times, i.e. the period from the 9th to the 16th century (see Mannermaa et al., this volume). However, not all those hair finds can be associated with former bear skins as shrouds or rugs for the deceased, as the skins might also have been used for garments.

In the following, the burials are introduced first, and thereafter the actual or assumed skins are described. The text itself is kept short (cf. Table 1 for standardised information about burials and skins).

The burials with bear skins

The Norwegian and Swedish burials with bear skins amount to a number of only 15, but it cannot be ruled out that more such cases might be discovered when excavation reports from the early days of archaeology, i.e. the 19th and early 20th century, were studied again. Although there are six finds from southwestern Norway (Rogaland and the western part of Agder), two from Gotland and two from Högom (Medelpad, northern Sweden), they do not form any well-defined subgroups. Thus, the material is limited, unrepresentative and statistically meaningless. Each new find may change the entire picture (see postscriptum).

Among the 15 burials with bear skins, there are eleven inhumation and four cremation burials. This does not come as a surprise, since it is only the former context in which one would expect skins to have survived, but only under very fortunate circumstances (see below). Nine burials of the total amount of 15 belong to the Migration Period (375/400–550/575) and three more to the immediately preceeding Late Roman Iron Age ("C3" = 325–375/400), while one is even older; the burial at Smiss on Gotland reaches as far back as 160/180–325 ("C1 to C2" of the Late Roman Iron Age). In turn, one burial belongs to the Vendel Era (550/575–750/800), which followed after the Migration Period, and one defies a dating (Nedre Aure, Voss, Vestland/western Norway). Caution is due because of the small amount of graves, but the Migration Period is perhaps less dominant than has previously been thought when it comes to burials with bear skins; the given chronological distribution has to be related to that of the interments with bear claws known from some Scandinavian regions (see various contributions, this volume).

It is quite remarkable that five out of 15 burials with bear skins are among the richest of their time. This is accentuated not only by their exquisite furnishings but also the substantial grave mounds, the construction of which was energy- and time-consuming, and their oversized grave chambers/cists (however, the diameter of the mound for inhumation grave V at Snartemo is unknown, whereas the cremation burial at Haram had only a small chamber for the urn).

The oldest wealthy burial to be mentioned here is that of the "Lord of the Rings" at Haram (western Norway), a cremation dated to the timespan of *c.* 325–375/400 and furnished with a gold ring of almost 600 g, which by its weight might be the heaviest of all such rings found in Norwegian, or rather northern European Iron Age graves (Hagen 1983, 323–328; Solberg 1984, 100–101; Ringstad 1986, cat. no. 260; Solberg 2000, 121). There are also lesser gold rings in the burial, meant – at least for two out of three rings – to be worn by a male person, as has been suggested. According to the burial rite in the given time span and region, weapons were only in rare instances, if at all, part of the grave furnishings in inhumation burials (Bemmann/Hahne 1994, fig. 33). However, it all depends on the burial rites – the man interred at Haram might have led a life comparable to those of other high-ranking male individuals who were granted magnificent inhumations with exquisite weapon furnishings.

The Migration Period "Master Warriors" in Norway (west: Evebø; south: Snartemo, grave V) and Sweden (north: Högom, mound 2) have in common exquisite weapons with mounts of precious metals (gold, silver), and their methods of manufacture reflect different branches of advanced handicraft (more generally Bender Jørgensen 2001; 2003; Ramqvist 2011). There are more common traits, too, such as the presence of colourful clothing. These burials have few, if any, counterparts in the northern European Migration Period.

In turn, the Krosshaug grave at Hauge in southwestern Norway, that of the "Petty Queen on the Bear Skin", is among the richest of all the female burials in Migration Period Norway and probably beyond (Magnus 1975; Kristoffersen 2000, cat. no. 47). In her case, the main dress pin – fibula – of gilded silver is an object of the highest advancement in handicraft, but there are also other extraordinary finds, such as a large bronze hanging bowl.

The mentioned burials are markers for petty kings and a petty queen at the top of the social pyramid in a regional sense. High rank is also indicated by the remains of an actual petty king's seat with an "architecture of power", excavated only 200 m away from the Evebø weapon burial in western Norway and contemporaneous with it (Hatling 2009).

In contrast, the remaining ten burials with bear skins defy any comparable interpretation. However, they mostly rank "above average" because of their grave furnishings, which include rings of gold and silver and foreign goods such as glass or bronze vessels. These burials indicate a local upper class under the control of the above-mentioned petty kings / petty queen.

Exceptions from the rule are the burials in Nedre Aure, Voss (Vestland), for which there is no proper record of find circumstances and finds, and an interment at Døsen in Os, likewise in western Norway/Vestland. The latter, the secondary burial of a man, which accompanies the primary burial of a child, has only meagre furnishings (mound IV for both). The man had with him, amongst other things, a knife, a pair of scissors, and a pair of bronze tweezers (Shetelig 1912, 139–150). However, when seen against the background of six burial mounds, which probably represent different generations of a Migration Period farm population, the area is in part "above average" again, due to one female grave that was furnished with, among other things, a gilded silver relief fibula (mound II; cf. Shetelig 1912, 132–139; Kristoffersen 2000, 344–345 cat. no. 74). Furthermore, among the six grave mounds, two have a diameter of almost 20 m (mounds I and IV), which places them close to the lower end of western Norway's largest burial mounds. These are thus named since their construction demanded considerable time and energy (Ringstad 1986).

As already mentioned, the Krosshaug petty queen's grave in southwestern Norwegian Hauge belongs to the richest of its kind in Migration Period Norway (and probably northern Europe), and, in social respects, it stands alongside the contemporaneous burials of "Master Warriors". Remarkably, a female burial on Gotland (Smiss; *c.* AD 160/180–325; cf. Almgren/Nerman 1923, 89 fig. 156a; Petré 1980, 6) is the oldest one with a bear skin in northern Europe. Another female burial to that effect, the earliest one in Norway (Føre, burial 2, *c.* 325–375/400; cf. Sjøvold 1962, 77), has only two counterparts (male in gender). The find from Føre deserves particular attention due to its location

in the far north (Fig. 3). However, the glass beaker found in that burial, a product of Roman origin, indicates supra-regional contacts (Lund Hansen 1987, 442). In addition, among the Norwegian material, there is one burial of several women (Sletten; cf. Kristoffersen 2000, cat. no. 26), and at least one double burial (male and female, Vemestad; Shetelig 1912, 158 footnote 1; Bemmann/Hahne 1994, cat. no. 201).

To sum up: caution is needed because of the limited number of grave finds, but a closer look reveals surprising results. Five burials – four male and one female – which are among the richest of their kind in the periods in question, against the background of a total body of 15, if at all, must not be neglected. In addition, there are other remarkable female graves; a Swedish one is the oldest of all burials with bear skins from northern Europe. Furthermore, a woman's interment, in fact from the far north of Norway, is among the oldest to that effect from this country, with two contemporaneous male graves.

The skins

Eleven inhumation and four cremation burials have yielded evidence for bear skins, which does not come as a surprise. Under very fortunate circumstances – the sealing of the grave by the exclusion of oxygen in a non-acidic environment – the inhumation burial rite can lead to the preservation of the bear skin (hair) and the paws with their claws. In the case of the latter, third claw-like phalanges (bones) are most often preserved, whereas the claws themselves, which consist of keratin and cover most of the phalanges, would have vanished. In the case of cremation, however, the burning on the funeral pyre would lead to the decomposition of the skin, with only deformed third phalanges able to survive, and the remains from the funeral pyre were then either covered directly by a mound, or were taken away completely, or sorted out *pars pro toto* and buried at some other place.

Strictly speaking, there are differences between burials with actual bear skins, those that have yielded only small bear skin remains with claws still attached or missing, and burials with unspecified animal skin, found together with bear claws. It would definitely be beneficial to analyse all bear skin/hair finds preserved in archives, using modern nomenclature consistently, and this should also include the more dubious cases. In four instances, unspecified animal skin has been found together with bear claws (Eik, Haram, Krosshaug [Hauge], Vestre Skogsfjord), but are these skin remains really from bear? Likewise, all preserved remains of unspecified animal skins found together with unspecified claws, or without any of these, should also be studied to see if there are more cases with bear skins. This relates to the unspecified skin and claw find at Sletten in Norway (see also below on the weapon burial at Bø, Steigen, in northern Norway).

In three instances – inhumation burials from northern Norway (Føre, burial 2) and Gotland (Smiss and Hallvede) – groups of bear claws have been found in correct anatomical order which indicates a bear skin that has since detoriated (Føre: Sjøvold 1962, 77; Smiss and Hallvede: Petré 1980, 6). The Føre burial is somehow special since there was an organic layer (the remains of a bear skin?) found beneath the deceased. It is somewhat surprising that only seven claws were found in four groups, whereas both sites on Gotland have yielded close to twenty claws. At Smiss, there might really have been 20 claws, with three groups of five and one group of three, the latter one from a disturbed part of the cist, which might be the reason for the two missing claws; at Hallvede, three groups of five and one single claw have been recorded. There is yet another interesting case on Gotland: the weapon burial at Broa (550/575–750/800) in Halla parish (see Jordahl et al., this volume). However, this burial has yielded only two groups with altogether eight claws (one group of five, one group of three), placed right above the head and below the feet of the deceased. So, has really a skin been placed in that burial, with two separate paws and the body of the deceased situated on top of it?

The primary inhumation burial in mound 2 at Högom deserves particular attention since many animal hairs were found, mostly from bear, when the chamber grave of 5 x 2 m was excavated under laboratory conditions after it had been transported, encased, to Statens historiska museum/The Swedish History Museum in Stockholm (Nockert 1991, 31, 36). In fact, large parts or the whole floor of the grave chamber might have been covered with bear skins, and so was the deceased, judging from bear hairs situated on the belt and sword. Also, the secondary burial in mound 4 in Högom is worth mentioning (Ramqvist 1992, 194–198). This burial's rectangular layer, 1.85 x 0.9 x 0.2 m in size, has been described as a "patch of a settlement layer". As, however, bones and charcoal occurred in the entire layer, the question must be posed whether it represents in fact the remains of the actual funeral pyre that included a bear skin from which 13 bear claws were found scattered (but not, it would seem, in groups)? A shallow pit at the eastern edge of the mentioned layer contained human and animal bones, the former of an adult person whose gender cannot be identified and the latter belonging to different animals (sheep/goat, dog, horse). Among the finds there were pieces of bronze objects, a composite bone comb and a case for it, and the head of a bone pin. No gender identification is possible (personal communication, John Ljungkvist, Sweden). There may be a female sphere (bone pin) as well as a male one (the horse, the size of the funeral pyre), but this is inconclusive.

In the case of the western Norwegian inhumation burial at Døsen in Os (Vestland), the actual bear skin had decomposed, but its dark brown hairs were preserved and so were its claws, the latter in the form of keratin, whereas the bones themselves were gone (Fig. 2). This particular preservation may have been the result of acidic soil. The bear hairs at Døsen covered most of the grave bottom, 2.5 m in length, except for the southern end (0.20–0.30 m long). This length may reflect the complete skin of an adult male bear, but it will have to remain open as to how the width of such a skin, almost two meters, was coped with – was the skin cut so that it would fit the grave's internal width of only 0.70 m or had the skin been placed in several layers? (size of bear skin: personal communication with Andreas Zedrosser, Norway). And how many claw groups were really found in that burial, besides the one known from the photograph?

For a number of burials excavated in earlier days there is very little information; bear skin (hair) was found, sometimes together with claws (cf. Table 1). In this respect, pre-modern skinning needs to be considered (for the following, personal communication with Tuija Kirkinen, Finland, is acknowledged; see also Kirkinen 2017, 5–8). The easiest way of skinning would have been to remove the paws from the carcass. However, the handling was different in pre-modern times; the paws were in fact left in the skin for some reason we do not know, be it aesthetic or symbolic. In that case, the paw needed to be skinned carefully, otherwise the claws would loosen and drop off. Bones (phalanges) would survive under fortunate circumstances, whereas the claws themselves, which consist of keratin and cover most of the third phalanx, would vanish in inhumation burials over time or would be destroyed on a funeral pyre. If only third phalanges are found in burials, they may indicate that a whole skin with paws had been placed in an inhumation or on a funeral pyre, with the deceased placed on top. Alternatively, just claws with or without attached skin remains could have been deposited. This is frequently found in archaeological contexts: third claw-like phalanges as remnants of the claws. This use of only the claws, however, would leave the question open as to what happened to the actual skin.

In the majority of inhumations that have been recorded, the deceased seems to have been placed on a bear skin under which there was often a layer of bark. However, the deceased in Högom mound 2 might have been *covered by* a skin, but the question is open as to whether the deceased also *lay on* a skin, since no hairs seem to have been found beneath the deceased (see above).

Remarkably, each of the four cremation burials with assumed bear skins represents a case of its own, and three out of four represent evidence for unspecified animal skin found together with bear claws (see above). Skin was either 1) placed on the funeral pyre and, after the fire, directly covered

by a mound (see mound 4 at Högöm, the interpretation of which, however, is not beyond doubt), 2) wrapped around an urn in which no less than 15 bear claws were found (Haram; Solberg 1984, 100–101), 3) wrapped around human bones and then placed in a metal urn (Eik; cf. Holck 1986, 177), or 4) placed in a metal urn, alongside other furnishings (Vestre Skogsfjord; cf. Holck 1986, 247).

To sum up, it is only for about one half of all the 15 burials that the existence of real bear skins can actually be attested, five of them being inhumations (Døsen, Føre grave 2, Hallvede, Högom mound 2, Smiss) and two cremations (Haram, mound 4 in Högom). For the other half of the burials, the available information is rather limited; perhaps there were more cases with real bear skins, or only third phalanges with the remains of attached bear skin were placed in the burials with no connection to the skin itself.

Interestingly, it has been argued on a medical-anthropological basis that the wrapping of a body in a bear skin would have hindered the cremation of that person or made it impossible (Holck 1986, 173). This assumption, however, is contradicted by the archaeological finds themselves, which show that even horses were burnt on funeral pyres in parts of Iron Age Sweden (personal communication, John Ljungkvist, Sweden), and even more so by experimental archaeology (personal communication, Mogens Bo Henriksen, Denmark, who has studied this topic for decades; see most recently Henriksen 2019). If the cremation pyre was constructed in the right way and the fire well maintained, any corpse, human or non-human, was cremated in a couple of hours, with less than two cubic meters of firewood needed. Thus, a bear skin would not affect the cremation process.

Final remarks

The maximum number of only 15 mainly Migration Period burials in Norway and Sweden with actual or assumed bear skins is too small to generalise in any way. Actually, as it turns out, only for around one half of the burials can a real skin be documented, whereas the other cases remain dubious. Although there are differences in evidential value – actual vs. assumed bear skin – all burials shall be taken into account in the following. It also has to be kept in mind that each new find might change the entire picture (see postscriptum). Despite all source problems, however, some findings are pretty surprising.

Five out of the 15 burials are outstanding in their construction and furnishings. These people were at the top of the social pyramid during their lifetime, as petty kings and "warriors" (which would allow here to introduce the idea of berserks), but there was also one petty queen laid to rest in one of these burials. The ten other finds, mainly of men, usually indicate people of some rank, but only at a more local level.

Likewise surprisingly, the earliest of these burials, which dates to the pre-Migration Period and contains an undoubted skin (Smiss; 160/180–325), is that of a woman, and was found on Gotland, whereas the oldest female burial of this kind in Norway (Føre grave 2; 325–375/400), with two contemporaneous male counterparts, was found in the very far north of the country which makes it even more interesting.

Finally, it is no wonder that the burials with actual or assumed bear skins are mostly inhumations. In these cases, the deceased was placed on a skin which in turn had been placed on a bark layer, and it is only due to very fortunate preservation conditions that the skin (hair) has survived. Again surprisingly, each of the four cremation burials seems to represent a case of its own in the use of the bear skin; in the first case as a rug for the deceased person on the funeral pyre (?), in the second for wrapping up the urn, in the third for wrapping up human bones that were then placed into the urn, and in the fourth as partial skin, placed in the urn, alongside other furnishings.

Acknowledgements

The author would like to thank Dr. Tuija Kirkinen (University of Helsinki, Finland) for sharing her knowledge on bear skinning and bear skin/bear hair, Prof. Andreas Zedrosser (University of South-Eastern Norway) for information about bear skin size, Assoc. Prof. John Ljungkvist (University of Uppsala, Sweden) for all his expertise on Sweden, and Dr. Mogens Bo Henriksen (Odense City Museums, Denmark) for consultation about the eventualities of the cremation burial rite. Remaining errors are the author's responsibility.

Postscriptum

It was in the final phase of manuscript completion that the author became aware of important findings from northern Norway, which will be only briefly introduced here. So far, the only burial with an assumed bear skin in that part of the country is grave 2 at Føre, Bø (Nordland) mentioned above, the burial of a woman which dates back to the period of *c.* 325–375/400, with bear claws, yet only seven of them, in the four corners of the cist and an organic layer beneath the interred person, considered as the remnants of the fur. New knowledge about bear skins in burials can be gained from both the reconsideration of older finds and the excavation of new ones (Fig. 3).

As it turns out, in the case of grave 1 at Føre, the burial of a man with weapons, one has to return to the original excavation report from the 1950s; it is only now that information from that report has been published. As in the case of grave 2, an organic layer was observed beneath the interred person in grave 1, accompanied by one group of four claws in one of the corners of the burial (Klokkervoll 2015, 66–67; Roth Niemi 2018, 48). The find can be dated to the late second or the first part of the 3rd century AD (Ilkjær 1990, cat. no. 182; Bemmann/Hahne 1994, cat. no. 410).

Another case is represented by the weapon grave in mound I at Bø, Steigen (Nordland), found together with a female burial and excavated in the early 1950s (Slomann 1959). Both burials have the same dating as the aforementioned grave 1 at Føre (ibid, 3–4; cf. Ilkjær 1990, cat. no. 78; Bemmann/Hahne 1994, cat. no. 409). The find context of the weapon burial needs further clarification; in the original publication, the remains of skin are mentioned (Slomann 1959, 3–4), and the find catalogue from Tromsø Museum lists the remains of animal hair (Ts 5401 I), whereas in recent publications reference is made to "remains of fur with thick hairs, presumably from bear" (Bakke 2012, 46; cf. Roth Niemi 2018, 48–49). Thus, two questions emerge: What is really stated in the original excavation report about skin and hair, and what would be the results of modern scientific analysis of these organic materials? In the present situation, with the absence of bear claws, the burial at Bø cannot be listed among those with actual or presumed bear skin.

Remarkably, there is also one most recent find which came to light during a rescue excavation in 2017; that at Hillesøy (Kvaløy) to the west of Tromsø (Troms; cf. Roth Niemi 2018). Half of the burial had already been destroyed before the archaeologists were informed, but what was left is a weapon burial in a 5-m-long boat, dated to the transition from the Merovingian to the Viking Age, around AD 800. One group of five claws was found in the intact part of the grave; five more were discovered, however, no longer *in situ*. Beneath the deceased there was a dark layer, interpreted as the remnants of a bear skin.

The mentioned burials at Føre (grave 1), Hillesøy, and, potentially, Bø are quite similar as they are "above average" in their furnishings and belong to small groups of mounds that may reflect different generations of local farm populations (see mentioned literature). Worth highlighting are two burials at Føre, one of a male (grave 1), the other of a female (grave 2) individual; the male grave is the earliest one in Norway with an assumed bear skin, and so may be the more dubious find from Bø that would

require more analysis. In turn, the interment at Hillesøy is the latest of all the burials with a bear skin known in Norway and Sweden (however, one find from western Norway – that from Nedre Aure, Voss [Vestland] – defies a dating).

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Fig. 1. Burials with bear skins from Norway and Sweden, mainly Migration Period (1–11: Norway; 12–15: Sweden. Cf. Table 1).



Fig. 2. Bear skin (hair) found in the Migration Period male grave (mound IV) in Døsen, Os, Hordaland in western Norway (after Shetelig *1912, fig. 346).*



Fig. 3. Burials with actual or assumed bear skins from northern Norway. 1: Bø, Steigen (Nordland); 2: Føre, Bø (Nordland); 3: Hillesøy (Kvaløy) to the west of Tromsø (Troms).

Table 1. Burials with actual or assumed bear skins from Norway and Sweden, mostly from the Migration Period (nos. 1–11: Norway; 12–15: Sweden). B = Bergen Museum, Norway; C = Oldsaksamlingen, Oslo, Norway; SHM = Statens historiska museer, Stockholm, Sweden; Ts = Tromsø Museum, Norway.

No./Location	Mus. find no.	Excavation year	Dating	Burial type	Mound	Chamber/cist	Gender	Description of bear skin (hair)	Social status of the deceased	Selected bibliography (bear remains, find catalogues)
1. Føre, grave 2 (Bø, Nordland)	Ts 5338	1950s	*c.* 325–375/400	Inhumation	"Quite large"	2.5 x 1 m	Female	Skin as rug (preserved bear skin, plus seven claws in four groups)	Above average	Sjøvold 1962, 77; Lund Hansen 1987, 442
2. Haram (Haram, Sunnmøre)	B 12048	1960s	*c.* 325–375/400	Cremation	30 x 1.5 m (diameter)	Small pit	Male	Skin wrapped around the urn (preserved animal hair, plus 15 bear claws)	Petty king	Solberg 1984, 100–101; 2001, 121; cf. Lund Hansen 1987, 440
3. Evebø (Gloppen, Vestland)	B 4590	1880s	Late 4th/5th century	Inhumation	25 x 4 m (diameter)	4 x 1 x 1 m	Male	Skin as rug (preserved bear skin and hair)	Petty king	Gustavsson 1889; Shetelig 1912, 111–117; Ilkjaer 1990, cat. no. 157; Bemmann/Hahne 1994, cat. no 308; Kristoffersen 2000, cat. no. 92
4. Nedre Aure (Voss, Vestland)	B 520–525	1835	Not datable	Inhumation	Unknown	4.5 x 0.9 x 0.8 m	Double grave; unknown gender	Remains of a bear skin	Average?	Description of B 520–525 in the find catalogue (Bergen Museum)
5. Døsen (Os, Vestland)	B 6091	Early 1900s	*c.* 425–475	Inhumation (secondary burial)	18 m (diameter)	2.7 x 0.7 x 1.20 m	Male	Skin as rug (preserved hair and at least five claws from one bear paw)	Below average	Shetelig 1912, 141–148
6. Krosshaug (Hauge, Klepp, Rogaland)	B 2269-82, 2288-92, 2294-99	1860s	*c.* 450	Inhumation	30 x 5 m (diameter)	5 x 1 x 1 m	Female	Skin as rug (four bear claws and animal hair)	Petty queen	Magnus 1975, 19–20, 106; 2014, 74; cf. Kristoffersen 2000, cat. no. 47
7. Sletten (Vanse, western Agder)	B 4234	1880s	Late 5th or early 6th century	Inhumation	Remains of a mound	Unknown	Females (several)	Skin as rug (preserved animal skin and one claw)	Above average	Description of B 4234 in the find catalogue (Bergen Museum); Kristoffersen 2000, cat. no. 26
8. Snartemo, grave V (Hægebostad, western Agder)	C 26001	1930s	Late 5th or 6th century	Inhumation	Unknown	5 x 1 m	Male	Skin as rug (three bear claws, hair, and possibly skin)	Petty king	Hougen 1935, 8–9; Bemmann/Hahne 1994, cat. no. 199; Kristoffersen 2000, cat. no 19

Cont. Tab. 1. ▶

Cont. Tab.1

No./Location	Mus. find no.	Excavation year	Dating	Burial type	Mound	Chamber/cist	Gender	Description of bear skin (hair)	Social status of the deceased	Selected bibliography (bear remains, find catalogues)
9. Vemestad (Lyngdal, western Agder)	B 4414	1880s	Mid-5th century	Inhumation	"Substantial"	3.3 x 0.9 x 0.8 m	Male and female	Skin as rug (preserved bear skin)	Above average	Shetelig 1912, 158, footnote 1; Bemmann/HAhne 1994, cat. no. 201
10. Vestre Skogsfjord (Mandal, western Agder)	C 2701-2707	Pre-1860s	Late 5th/6th century	Cremation	Unknown	Unknown	Male	Skin in a metal urn (three bear claws and animal skin)	Above average	Gjessing 1925, 44; Holck 1986, 247; Hauken 2005, cat. no 21
11. Eik (Søgne, western Agder)	C 23256	Pre-1925	*c.* 325–375/400	Cremation	Mound of unknown size	Small chamber	Male and second person	Bones wrapped up in skin (preserved animal skin and nine bear claws)	Above average	Gjessing 1925, 44; Holck 1986, 277; Lund Hansen 1987, 436; Hauken 2005, cat. no. 25
12. Smiss (Eke, Gotland)	SHM 16113	1910s	*c.* 160/180–325	Inhumation	"Shallow"	3.4 x 0.6 m	Female	Skin as rug (four groups with 18 claws; 3 x 5 plus 1 x 3)	Above average	Almgren/Nerman 1923, 89 fig. 156a; Petré 1980, 6; Lund Hansen 1987, 446
13. Hallvede (Eke, Gotland)	SHM 25133	1950s	*c.* 550/575–750/800	Inhumation	Flat grave	2.2 x 1.5 m	Male	Skin as rug (four groups with 16 claws; 3 x 5 plus 1 x 1)	Above average	Description of SHM 25133 in the find catalogue (Statens historiska museum); Petré 1980, 6 fig. 2
14. Högom, mound 2, (Selånger, Medelpad)	Sundsvall Museum (no.?)	1950s	*c.* 350–450	Inhumation	40 m (diameter)	5 x 2 x 1 m	Male	Skin as cover and on the floor of the grave chamber (preserved hair)	Petty king	Nockert 1991, 31, 36; Ramqvist 1992, 46–47; Ramqvist 2000
15. Högom, mound 4, (Selånger, Medelpad)	Sundsvall Museum (no.?)	1950s	*c.* 375/400–550/575	Cremation (secondary burial)	40 m (diameter)	Man-sized layer	Unknown	Skin and 13 claws on the funeral pyre (?)	Above average	Ramqvist 1992, 194–198

Sámi bear graves – results from archaeological and zooarchaeological excavations and analyses in the Swedish part of Sápmi

By Elisabeth Iregren

Keywords: Sámi culture, bear grave, bear hunting, zooarchaeology, archaeology

Abstract: This contribution deals with a specific ritual expression among the Sámi, the bear grave. Brown bears were sacred in the Sámi society. They were hunted, killed, and then consumed during a feast. All bones of the killed bear were afterwards collected and carefully buried. At present, in the Swedish part of Sápmi, we have evidence of definite Sámi bear graves going back in time for one thousand years. This article mainly deals with the knowledge about bear graves from archaeology and zooarchaeology. A typical Sámi bear grave consists of all the bones of one buried bear individual, but of no other animal species. The bones have been split for marrow. The burial was erected close to a newly built hut, and the construction of the grave was elaborate. Artefacts were rarely deposited in the grave. New radiocarbon dates are presented here. The bone material is used to find out more about the traditions surrounding the burying of the bear. Weapons and hunting injuries are described. Further, the location of bear graves in relation to other human constructions is discussed. To some extent historical sources are also dealt with. Ideas for future work are suggested.

Background

The Sámi culture is of course complex and varied, and there are temporal variations. As a cultural historian one could deal with, for example, settlements, burial grounds, and ritual expressions of the society. Human culture, beliefs and rituals are visible today through offering sites, depositions of bones or objects, the ceremonial drums, and in the bear and reindeer ceremonies. Here, I will deal with the Sámi bear graves.

The brown bear is a typical species of the taiga in the northern hemisphere. Around the North Pole many groups of people living on hunting and fishing have had special and ritual bonds to the bear in the past. Examples of these are the Sámi, Finns, Karelians, Shantis, Udmurts, Ostyaks as well as the Ainu in Japan, and Algonkin-speaking Indians in North America (see different contributions in the present volume; see also Zachrisson/Iregren 1974, chap. 6–7; Bäckman 1981, 44; Edsman 1994, 42–49; Wamers 2015, 41–52). Thus, as many hunters reverenced the bear, Sámi and Finnish bear rituals are parts of a much larger sphere of hunters' rituals. Bear remains have been found in recent years in Siberia, close to Lake Baikal, in human burials at very early ritual sites. These graves were created 6,000–5,000 and 3,400–2,000 years BC (Losey et al. 2013, 65 table 4.1). Many bear bones were excavated from these early graves. The most frequent remains of the bear found are the cranium and baculum (*Os penis*).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 547–586 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134349

As regards the Sámi traditions, there are written sources, ethnographical investigations and archaeological documentations that form an excellent basis for our studies. Among the Sámi the bear belonged to a divine sphere, but it was not considered a god. Thus, no offerings were made to it (Bäckman 1981, 45, 48). On this point, however, Edsman (1994, 50) seems to disagree. The bear belonged to the supernatural worlds and was highly respected. It was regarded as a living, feeling, and thinking creature (Bäckman 1981, 47). Through the ceremonies the bear was supposed to come back to its own world while it was honoured. It was further looked upon as the most sacred of all animals (Bäckman 1981, 48; Quigstad 1903, 27; citation after Schanche 1997, 262).

As in most hunting societies, many rituals concern the violent and bloody relation between the hunter and his prey. Thus, there were rules to follow so that the delicate balance between Man, the supernatural powers and the beasts could continue and remain in balance (Edsman 1970, 48). Honouring the bear during the feast and erecting a bear grave are just a few of these demands to be fulfilled (Schefferus 1956, 269).

The first written notation about the Sámi and their bear ceremonialism has been found in a Norwegian royal chronicle from 1606, *Cronicon Regiae Norvegiae* (Edsman 1994, 51). The chronicle was written by Halvard Gunnarsson who was working as a clergyman in Oslo.

Sámi beliefs and traditions, in particular testimonies on Sámi religion, have been recorded since the 17th century. However, there are substantial problems in interpreting the historical sources on Sámi rites, beliefs, and religion. The documents are few and they frequently quote one another. Further, many of the authors were priests and missionaries with limited understanding of non-Christian believes and the Sámi culture in general (Hultcrantz 1983, 23; Fossum 2006, 16). Fossum (2006, 7–14) gives a detailed account of the geographical and temporal origin of historical sources in Sweden and Norway.

In this article I will mainly rely on and cite Pehr Fjellström's book from 1755 (Fjellström 1981). I will follow the facsimile text published in 1981, including valuable comments by Professor emerita Louise Bäckman. Fjellström was a clergyman in Lycksele parish, Lapland. The bear graves that we know most about derive from this region (Fig. 1).

The first bone finds in Sweden to be identified as a Sámi bear grave came to light around 1914 in Jämtland, close to Lake Värjaren (Manker 1957, 279; Zachrisson 1983). In Norway, a bear grave was recorded at Salsfjället in Namdalen in 1940 (Petersen 1940). It is situated not far from Värjaren. During the 1950s scholars investigated the Nedre Vapstsjön (Manker 1957, 254) and Sörviken bear burials in Sweden (Janson/Hvarfner 1960; 1966).

Bears and bear graves in the Nordic area

There were several ways to establish and maintain close links between man and bear in the old cultures in the Fenno-Scandic area. These bonds might be expressed as bone depositions, elaborated artefacts, or depictions of the species.

In settlements in northern Sweden finds of bear bones are, however, very scarce (cf. Zachrisson/Iregren 1974, tables 3, 5; Ekman/Iregren 1984, table A; see also Magnell on bears and humans in Sweden, this volume). At one of these sites, however, three bear bones were found, all deriving from the paws. Most interesting is also that this is where one of the extremely few bear-shaped artefacts was recovered (Fig. 2). It is a whetstone made of sandstone, shaped as a bear's head. The settlement is dated to 4100–1700 BC.

In northernmost Norway a great number of rock carvings with bears, their dens, bear tracks, and hunts have been depicted, for example, in Alta. Knut Helskog has dealt with these in detail (e.g. Helskog 1999; 2012). The rock carvings are dated to the Late Mesolithic and the Neolithic periods (ibid.), and thus indicate a very long tradition of hunting brown bears at the den. Spears, and bow and arrow

seem to have been the weapons most frequently used, judging from the rock panels. These rock carvings thus reveal the hunters' intimate knowledge of and their bonds to the species.

In contrast to Norway, rock carvings of bears are rare on the Swedish side of the Scandinavian Mountain Ridge. At the site Nämforsen, Ådalsliden parish, Ångermanland, Hallström (1960, 291) early on recorded a small number of figures as possible bear representations among more than 2,000 carvings. The datings of a nearby settlement and this enormous site with rock carvings cover 1,500 years; they cannot be younger than 2,000 BC (Baudou 1993, 81–91). Lindqvist (1994, table 9.5.), in his thesis on rock art, reports 19 (?) possible single rock engravings of bear (and dog?) at the very large Nämforsen site.

Bears have also in the past been painted in red ochre on rocks in northern Sweden, for example, on the cliff sides at the site Flatruet, Härjedalen (Fig. 3; cf. Hallström 1960, 95). The bear figure is considered to be the oldest painting at the site, more than 4,000 years old (Sandell 2010, 24). Baudou (1993, fig. 59) dates the site to the same period and somewhat later.

Sámi bear graves in the Swedish part of Sápmi

In this contribution, I will focus on Sámi bear graves, definite and possible ones, in the Swedish area of Sápmi, the cultural region raditionally defined as inhabited by the Sámi people. Many burials have also been found in Norway (see Sommerseth, this volume; Petersen 1940; Myrstad 1996; Schanche 1997, 243–245; Fossum 2006, 100–107; Sommerseth 2021). My new investigations of bone material in 2020 mainly concerned the bear bones from Sörviken (site no. 2), Nedre Vapstsjön (3), Tiirivara (4), Mjösjö (5), Avaträsk (9), Långbäck (14), Gråtanån (15) and Öhn (16–17; see Table 1).

Table 1 contains a list of irrefutable and possible bear graves; site, location, ownership, and inventory numbers are included. I would assume that bear rituals were also performed and burials constructed in Finland and in the Kola peninsula, as these are known Sámi territories. Such burials have not yet been found, but then this is the late distribution area of Sámi groups. A bear spear from northern Finland that has been located in the County Museum of Västerbotten at least indicates bear hunts (cf. Table 5 for inventory no. 80481). We would also expect bear graves to be found in many more southern areas in Sweden, too, e.g. the counties of Dalecarlia (Iregren 2022, 61–68), Västmanland, Västernorrland and Gävleborg.

In Sweden we have performed many professional excavations and detailed analyses, and now many burials have been dated (Zachrisson/Iregren 1974; Melander 1980; Zachrisson 1983; Mulk/Iregren 1995; Broadbent 2005; 2010). Archaeological and zooarchaeological observations and data form the basis of this study. Thus, details of the bear graves can be found in the mentioned publications as well as in a report from the Norwegian Sámi Council (Iregren et al. 2017).

Description of an irrefutable bear grave

I will start by introducing a typical bear grave in the taiga, based on the excavations and analyses of the bear graves in Gällholmen, Sörviken, Gråtanån, and Karats. I took part in the work with all of them. The first three constructions were complete when found.

A Sámi bear grave ideally consists of all the bones (unburnt) from one killed and consumed brown bear individual. Among the bones, the skull, the lower jaws, and the shoulder blades are never damaged during parting, fileting, cooking, and consuming the bear. Accordingly, these skeletal parts always hold prominent positions in the construction (Zachrisson/Iregren 1974, fig. 21). All bones containing bone marrow have been cleaved in all the bear graves revealed so far.

Burial construction and bone depositions

The heap of bones is built either on the ground surface, in a pit, under a cairn, or in a crevice or similar place. Thus, we see a variation. Mulk/Iregren (1995, 24) divide the bear graves into three

variants – one with wooden supports, a second one under a cairn, and a third one in a crevice. At present, we have more information from the burials in woodlands than in mountainous areas. Further, regarding Gråtanån in the Vilhelmina parish, an archaeological excavation immediately followed the discovery of the bear grave and thereby information on more fragile details was not spoilt. Logs and other wooden remains in the Gråtanån bear grave have been examined and determined as pine (Melander 1980).

The stratigraphy of the Gråtanån bear grave is described as follows in the report (Melander 1980, translation and summary by E. Iregren): The turf had been removed from the ground surface. In this area people had laid thin poles and birch bark. Above it, cut wooden slabs were placed crosswise in two or three layers, perhaps even a woven container or mat, a wickerwork of laths or likewise. A larger stem was also found here, and above it a further layer of birch bark was laid.

The Karats bear grave reveals other details of preparation. Initially the ground surface was burned – just to melt the snow? Then birch bark formed the base of the bed of bones. On top of the bone concentration stones sized 0.10–0.45 m had been put, presumably to cover and protect this bear grave (Mulk/Iregren 1995, 13–14).

The bones in the Gråtanån bear grave were then organised as described below. It is evident that these burials were built with great care and devotion. On top of the heap of bones, birch-bark and logs of pine covered and protected the grave from scavenging animals, as is also the case in Sörviken and Gällholmen. In Karats the bear grave was sealed by several rounded stones of different size (Mulk/Iregren 1995, 13–14).

Still more bone elements than skull and shoulder blades may have been arranged intentionally, e.g. the vertebrae of the neck and bones from the paws in the Sörviken and Gråtanån burials (Fig. 4; Zachrisson/Iregren 1974, fig. 26–27; Melander 1980, figs. 12, 15). The vertebrae of the neck were deposited close to the skull. In the Sörviken and Gråtanån bear graves many bones of the paws lay together (Fig. 5). In the Gällholmen burial just a few of these bone elements were placed close to one another. The paws had obviously been split lengthwise along the five digits. Sinews and/or meat connected many of these small paw bones in neat rows when they were put into the burial.

Further, other vertebrae and bones might create a mid-line in the burial (Zachrisson/Iregren 1974, fig. 26; Melander 1980, fig. 13) and may supposedly be an intentional depiction of the backbone of the bear. The Sámi seem to have striven meticulously to re-shape the anatomy of the bear in the burial, although all long bones had been split to get at the marrow. Accordingly, this was a difficult task. According to historical sources, this aim is clearly referred to and must be fulfilled (e.g. Fjellström 1981, 28, see Zachrisson/Iregren 1974, 92–93 for a more thorough discussion).

Terminal phalanges of a fur animal may have the status of buried bone parts, or they can belong to a pelt, or both. In the latter case they might be regarded as an artefact (see below). These phalanges are only rarely found. In the Gråtanån bear grave (Melander 1980) seven terminal/third phalanges were recovered, and in the Nåttinäset and Aspnäset burials one single third phalanx was found in each of them. In all other burials in Sweden these elements were missing (Table 2).

Few and rare artefacts

Archaeological finds from bear graves have rarely been documented. Artefacts or constructions of organic material might have existed, as the "wicker" in the Gråtanån burial indicates, but may now often have disappeared.

On two occasions, lead bullets have been found in graves (Sörviken: one bullet; Gråtanån: four bullets; Fig. 6; cf. Zachrisson/Iregren 1974, 22, 27; Melander 1980). The weapons belonging to these bullets are judged to be muzzle-loading guns. During the second half of the 17th century these were becoming more frequent among the Sámi. The bullets in the two graves do not seem to have been fired (Zachrisson/Iregren 1974, 22; Melander 1980).

The cause of the depositions of these bullets has not been much discussed earlier. K.-Å. Aronsson (pers. comm.) points to the work by Högström 1980, 210). He refers to a tradition of putting not only the bear bones in the grave, but also objects such as skies, a knife, a wooden planer, or a piece of brass. Aronsson (pers. comm.) suggests that in these cases the objects seem to be offerings. Högström (1980, 210) mentions the depositions might have been intended to be of use in the bear's other world. The tradition of burial gifts in pre-Christian *human* burials was widespread among the Sámi and in other cultures. Many researchers within Sámi archaeology further stress the many similarities between bear graves and human burials (Zachrisson/Iregren 1974, 88; Schanche 1997, 261–264; Fossum 2006, 101–107).

Another artefact type has been exposed in one single bear burial in Sweden – Värjaren (Fig. 7) – and another one in Norway – Salsfjället in Namdalen: A brass chain had been hung at each cranium (Zachrisson 1983, fig. 6; Petersen 1940). Schanche (1997, 243, citing Bäckman/Kjellström 1979, 181) notes that rings of brass could be given as burial gifts to deceased humans. Högström's information (1980, 210) should also be kept in mind here. In this case, the brass might have been positioned as a kind of adornment or as a burial gift.

Discussion and clarifications

In this section I will not repeat for discussion features in the bear graves that are constant or *not* disputable. The following section is instead an attempt to discuss the variations noted and their implications for our interpretations. It should also be mentioned that bears of all ages (Table 2) and most likely of both sexes (Zachrisson/Iregren 1974, chapter 5.2) were buried.

When the Sámi reconstructed the bear in its grave, the skull, including the two lower jaws, was put in front of a heap of bones or on top of some bones (Gråtanån, Karats). Almost every single bone of the animal was carefully collected after cooking and consumption (Tables 2–3; Zachrisson/Iregren 1974; Melander 1980; Mulk/Iregren 1995). Only *one* bear individual is buried in a single spot. With this description as a basis – how should we look upon bear finds that do not demonstrate all the mentioned characteristics of a bear grave hitherto proven?

We must of course acknowledge the risk of lacking information or parts of the find, when local people have found the bear bones, or else when no proper excavation has been performed. Other circumstances might also have influenced the data. As the Gällholmen and Sörviken burials had been kept indoors for one or many years before investigation, possibly existing delicate wooden details or other organic constructions may have dried to dust (Zachrisson 1983, 90).

I look upon a bear bone collection where elements are missing in the following way: If the skull is missing, this is to me not an ultimate argument against the find being a Sámi bear grave, when many other bones of different body parts were found. A skull is an attractive trophy and might easily be picked up and taken away from a site by passers-by. As bear graves were often located close to the ground surface or in crevices or clefts, they can be detected relatively easy and contents can be removed.

Schanche (1997, 263), however, sees another possibility of intentional depositions of parts of bears. She stresses that the historical sources are dated to the same time span as the late bear graves, which are represented by many examples of complete burials. Thus, she mentions the possibility of depositions of only few skeletal parts/single crania, etc. in earlier rites. This is important to keep in mind.

Of course, such variations in rituals and behaviour might occur, although they are not yet proven. Schanche (1997, 264) also discusses another possible interpretation. One may look at bear graves as new expressions of ritual behaviour in a changing society. Stress from church, state and settlers in Sámi vital territories might have created a political and cultural situation where religion, traditions, and rituals were more important to keep, maintain and develop.

However, I here want to remind readers that in Norway many bear graves are not properly documented or excavated. Further, the tradition of complete burial is at least 1,000 years old in Sweden (see below, on dating). So, for the moment, my assessment is that it is important that many bones from the skeleton, preferably from all parts of the body, can be collected, as this is in firm agreement with hitherto irrefutable bear graves found and also the written sources. However, Fjellström (1981, 31) mentions a situation when parts of the bear might be missing already at the establishment of the grave. He records a situation when hunters other than Sámi were members of the hunting party. Different meaty parts of the bear's body could then be given away to these people and thus these bones would not be included in the grave.

One find of bear bones that is difficult to interpret under this aspect stems from the Aspnäset site (Zachrisson/Iregen 1974, 31; Mulk/Iregren 1995, 11), in particular because of its ancient date. No cranium has been found, but bones from many body parts were collected (Table 2). The site has not been excavated, but the bones were gathered during a cultural inventory performed by the Swedish National Heritage Board (Table 1). At present its very old date complicates the interpretation as a bear grave. The calibrated date shows that it is more than 4,000 years old (cf. Table 4 and Fig. 8).

At the site of Öhn, Ström parish in Jämtland, two bear mandibles were found by locals in 1950. They were discovered during peat digging for soil improvement at a depth of 1.2 m. We do not know more about this site. The mandibles have different sizes, and they both carry cut marks. Evidently, their origin is anthropogenic. Both mandibles yielded old dates, as did the find from Aspnäset. The calibrated results are different, the bones from Öhn are thus about 2,600 and 3,100 years old. At present the type of deposition is uncertain. A short archaeological investigation was performed in 2022, but no more bones were found (A. Hansson, pers. comm.; cf. Table 4 and Fig. 8).

Another situation to discuss is when a bear find includes bones from more than one bear individual. Such sites were identified at Nedre Vapstsjön and Långbäck. At Nedre Vapstsjön single bones from three bears were collected but none of the skeletons is complete. Only one skull now remains in a museum collection (Tables 2–3).

We know, however, from the many bear finds at Skagedalen, Spildra, Kvænangen, all Northern Norway, that one small area might be used over and over again by the Sámi. In this area four bear graves have been constructed (Myrstad 1996, 32–34; Iregren et al. 2017). At Spildra, however, the graves were deposited in a small bay as separate burials at separate locations (cf. Fig. 14). Further, Fjellström (1981, 27) mentions that the knowledge of a bear killing and of the bear's burial is narrated later. This, of course, makes it easy to return to the same area for a new feast and ceremonies. Regarding Nedre Vapstsjön, most bones seem to have been deposited in the same cleft in a split boulder (Manker 1957, 254; Zachrisson/Iregren 1974, 28–29, 39). Still in a cist, close to the boulder, a bear canine has been documented, and Manker (1957) also mentions an existing cultural layer there. So, these constructions might be separate bear graves. Two radiocarbon datings were made on bones of two bears and they gave similar dates, younger than AD 1533 (cf. Table 4 and Fig. 8; Zachrisson/Iregren 1974, 29).

Långbäck is another site that contains bones that indicate that bear graves were located close to one another (Zachrisson 1975b, 6–8; Mulk/Iregen 1995, 32–33). The site(s) were obviously heavily destroyed by water level changes due to the damming of the River Umeälv. Locals have retrieved scattered bear bones on several occasions when the water level was low. Three mandibles prove the existence of two bear individuals. Otherwise, the number of bones found is low (Table 2). Långbäck is likely to be a site where the local *siida* (a Sámi village, but an extended area) constructed several bear graves. An important source in this respect is the account of the traveller Daniel von Hogguér, who in 1828 (Von Hogguér 1841, 78) witnessed how two bears, killed from the same lair, were buried in two separate bear graves.

The bones from Nedre Vapstsjön demonstrate another feature that disturbs the interpretation of (a) bear grave(s). A wolverine cranium *(Gulo gulo*) and another 32 bone elements of the individual were found in the bone complex. I do not know of any ritual parallel to the occurrence of this species. Above, I argued that this could be a site with several bear graves. Or is it perhaps a Sámi sacrificial site or another type of bone cache not properly investigated, described, and understood earlier? In this context, we might consider the variety of reindeer *(Rangifer tarandus*) bone depositions that have been recognised and documented (Manker 1957; Zachrisson 1975a; b; Iregen 1983; Kjellström 1983; Zachrisson 1983; Mulk 1994, 170–176, and passim; Boëthius 2010).

Another site that further complicates our understanding of bear graves is the find at Grundskatan (Broadbent/Storå 2003; Broadbent 2005; 2010). Several bear bones, presumably from the same individual, have been identified by Jan Storå (Table 2). Broadbent/Storå (2003) point out many features at Grundskatan that coincide with the bear grave at Karats and other burials (Broadbent 2005, 25). However, the bones were found in-doors, a location which has not been acknowledged earlier regarding bear finds (cf. Fig. 21). In Norway, however, the archaeologist S. E. Grydeland has identified different ritual structures with wild and/or domestic animal species as depositions inside huts on the island of Spildra and elsewhere (Grydeland 2001, zooarchaeological notes therein by E. Iregren). The Grundskatan hut is dated to the Early Medieval Period. Furthermore, the bear bones there have partly been burned, but burnt animal bones are otherwise rare in Sámi ritual contexts in Sweden.

Dating of Sámi bear graves

In accordance with what we at present know for certain, a Sámi bear grave in Sweden might have been constructed any time during the last millennium (Table 4; Fig. 8). The dating results show that many of the excavated and now dated burials are relatively recent, later than AD 1533. The written evidence indicates that bear rituals were still performed as late as the 19th century. Zachrisson/Iregren (1974, 14, 94) refer to late sources on bear rituals. A traveller from Germany witnessed the construction of bear burials in Arjeplog as late as 1828 (Von Hogguér 1841, 78), but also even later recordings are known.

These late radiocarbon dates, further, coincide with the artefacts deposited, as for instance the lead bullets. They also generally correspond to the typological dating of the brass chain in the bear grave from Värjaren (see below; Fig. 7). On the other hand, artefacts, stones, and coal in the vicinity of a bear grave have not regularly been dated or closely examined. At the site of Nåttinäset a human burial from the Late Iron Age was also found (Zachrisson/Iregren 1974, 30). It is, however, to be noted that at present most Sámi bear graves in Sweden are dated younger than their counterparts in the Sámi areas of Norway (Myrstad 1996, 46–47; see Sommerseth, this volume).

The oldest Sámi bear graves in Sweden found so far are the unquestioned burials from Karats and at Nåttinäset, together with the supposed burial at Grundskatan (Table 4; Fig. 8). The oldest one is Karats, newly calibrated to AD 607–879 (1 sigma). Grundskatan seems at present a rather untypical bear grave (Broadbent 2010, tables 16–17; also see above). These bear finds are dated up to the 10th to 11th centuries (Mulk/Iregren 1995, 20; Broadbent 2005, 25–26, 34–35). These are also the northernmost bear graves hitherto found in the Swedish part of Sápmi. It is somewhat unexpected as they are not located in the areas in Sweden with the best possibilities for preservation of bones. In Norway, one bear grave – Kjærfjorden – is dated as early as the Early Iron Age, AD 220–331 (1 sigma, new calibration; T-12023; cf. Myrstad 1996, 39, 46; Sommerseth 2021, table 1). It is the oldest typical bear grave known in Scandinavia so far (cf. Sommerseth, this volume).

There are two bear finds from Middle Sweden that have similar dates as the Kjærfjorden bear grave in Norway. They have been recovered from two cremation graves in a burial ground in Härjedalen,

Krankmårtenhögen (Ambrosiani et al. 1984). Unburnt bones and antlers of mainly elk and reindeer had been deposited simultaneously on the surface of the human graves. One mandible and one fragment of a maxilla belong to a bear. This find, dated to the Early Iron Age, is unique but has a parallel in the nearby burial ground at Smalnäset (Ambrosiani et al. 1984, 56–58, 60, 71–73) and similar burial grounds in Dalecarlia and in Norway.

There are, however, some very old bear finds in the Swedish territories, from about 3,000 to almost 5,000 years old; the ones from Aspnäset and Öhn must be mentioned here. At present, we do not have much information about Öhn, but the unburnt finds have been dated. One jawbone belongs to the interval 809–788 BC (Ua-67671), and the other one to 1400–1295 BC (Ua-66094; Table 4).

The Aspnäset bear find (Zachrisson/Iregren 1974, 31, 59, 69–70) was discovered during an archaeological inventory (see above). The bones are dated to 2843–2206 BC (St-10192; Mulk/Iregen 1995, 11). This is the oldest brown bear find in Sweden which seems to display ritual connotations. It would be valuable to conduct an archaeological excavation at the site to collect more information. Also, a burial mound and a hunting pit were found very close. It should be noted that these finds all derive from areas in Sweden with better chances than usual for a good preservation of bones.

The present temporal distribution of the burials might partly depend on taphonomy; bone preservation in general is bad in northern Sweden. Only a few areas with sedimentary (calcareous) bedrock give better chances for bones to survive, for example, in parts of the counties of Jämtland and Dalecarlia. In northern Norway the geological prerequisites often provide much better possibilities for bone preservation than in most areas in northern Sweden and northern Finland.

As bear graves are related to hunting and hunters' rituals, we might expect earlier bear burials than the ones we know of so far to turn up. Further, the fact that bear hunting at the den was depicted in rock carvings several millennia ago could also point to an early dating of Sámi bear rituals (Helskog 2012).

Bear hunting among the Sámi

Through our knowledge as zooarchaeologists we can sometimes also enlighten the hunting in general and the situations involving humans and their prey. In most faunal assemblages it is difficult to study injuries from hunting and killing due to fragmentation during butchery and post-depositional taphonomic factors. The bear graves, though, offer an unusual opportunity to investigate damages, as the skulls were complete when deposited. However, as most other bones were split to get at the marrow it is difficult to find traces of the hunt affecting the long bones or the rib cage – not to mention the soft parts of the body.

However, as I needed good support in this task, associate Professor Peter Krantz helped me to evaluate the injuries of the bears in detail. He earlier worked at the National Board of Forensic Medicine, Lund. In 2020 P. Krantz has inspected photos of crania from the bear graves Sörviken, Nedre Vapstsjön, Avaträsk, and Östra gymnasium, Umeå (cf. Table 1). Krantz earlier investigated photos of a bear cranium from the island of Spildra, Northern Norway (Iregen et al. 2017, 29–30).

Weapons and modes of killing

Four skulls out of nine complete crania in irrefutable and possible bear graves in Sweden demonstrate clear traces from the hunt. These four individuals will be discussed in this section as well as one bear skull from Spildra, Norway.

In the historical sources the spear is often mentioned as the most important weapon during bear hunts. Little is known about axes, and there is no such term as a "bear axe", contrary to the bear spear. The sources always suggest a hunting party, i.e. that several Sámi men took part in the hunt (see Zachrisson/Iregren 1974, 80–81, about different sources on weapons).

Regarding historical guns, I have received valuable information from Kjell-Åke Aronsson, Ájtte (pers. comm.). Guns were, among the Sámi, important during hunting wild reindeer and were quite useful up to a distance of about 150 m. Wild reindeer were eradicated in Sweden in the late 19th century (Höglund 1958). The guns were, however, rarely used for bear hunts, as they were long and thus difficult to handle and somewhat unreliable with their flintlocks. Below, the injured bear skulls will be described and discussed one by one. We will interpret weapons employed as well as directions and strategy of attacks.

Sörviken, Stensele parish, Lapland

The cranium from the Sörviken bear grave gives vital information about the hunt (see Fig. 9 for details of the damages). This animal was attacked from above and from its right side. This is where the damages are at their deepest. The hunters' attack probably occurred as soon as the bear started leaving the den, when for a few moments it was quite vulnerable. Sharp cuts run parallel on the forehead of the bear. The bear was probably hit three times, and most likely the strikes followed one another in very quick succession. A sharp axe was used, and two cuts can easily be seen in the skull bone. The third blow closest to the back of the head was the deepest one; this is where the cranium carries the heaviest damages. When the first hit struck the bear it probably immediately threw its head to the side. The first axe blows partly penetrated the skull bones and created a depression, they entered the open spaces of the sinuses but did not kill the bear. The third blow, however, would have killed the bear instantaneously when the axe crashed the bone walls and reached its brain. Because of surface erosion not all details are well legible today. This attack was certainly performed by a very bold and experienced hunter.

Avaträsk, Dorotea parish, Lapland

Little is known about this bear skull, except that it was found in the ground in Avaträsk (see Fig. 10; cf. Zachrisson/Iregren 1974, 33, 39). Here it must be pointed out that, since my investigation during the 1970s, this cranium has unfortunately received modern damages during storage in the Swedish Museum of Natural History (ibid., figs. 62–63).

During the attack on the bear, a hunter struck the animal's head almost straight from above and hit its left frontal bone. This resulted in a hole in the bone walls of approx. 15 x 15 mm. The injury caused pain and distraction but did not result in death. The opening is symmetrical and was probably caused by a spear with a somewhat flattened head. The most likely scenario is a hunt at the den.

As the bear was wounded the hunters had to complete the attack when the bear fled, leaving the protection of the den, defending itself. One possibility would be to try to finish the hunt instantly, by other spear attacks from the side, to try to penetrate the rib cage and injure the bear's lungs and heart.

The Sámi used relatively long spears, much longer than a man's height (see below; Table 5). Thus, the spears were not easy to manoeuvre at short distances, but the hunters could strike the bear from a somewhat longer and safer reach. It is, however, unlikely that there was often a fight man to bear in open ground as this was hazardous.

County Museum of Västerbotten, former Östra gymnasium, Umeå

In the County Museum of Västerbotten there is another bear cranium stored (inv. no. Vbm 14070), which might stem from a possible bear grave (Zachrisson/Iregren 1974, 33, 58, 60–61). The holes seen in the skull definitely indicate damages inflicted by humans (see Fig. 12). The head of this bear, too, has been hit from above. One single strike caused two holes, sized 15 x 17 mm and 22 x 18 mm, respectively, in the left frontal bone. Most likely a spear was used. It penetrated the forehead and went through the eye socket, resulting in bleeding and loss of sight. The vital brain was not injured, so the hunt and the killing must have continued.

I have earlier incorrectly described this injury as possibly caused by a gunshot (Zachrisson/Iregren 1974, 82). However, this is not likely as the holes are much larger than the lead bullets found in contemporary bear graves. As already mentioned, bullets have been excavated from two bear graves. The four ones in Gråtanån are round and have a diameter of 9.45 to 9.77 mm. The single one in the Sörviken grave is 10–11 mm and hemispherical (Zachrisson/Iregren 1974, 22, 27; Melander 1980). According to K.-Å. Aronsson (pers. comm.) the diameters of bullets could vary between 6 and 16 mm, and the lead of the bullets could be recast and used again (cf. Fig. 6).

Peter Krantz argues that the bullets of those days did not inflict much larger wounds than their diameters, as the velocity was low. Further, the openings of the cranial bone walls are unsymmetrical, and their sizes also coincide better with the dimensions of bear spears.

Nedre Vapstsjön, Tärna parish, Lapland

The stone constructions at Nedre Vapstsjön form complicated structures, which are not understood in all their details (Zachrisson/Iregren 1974, 28–29, 54–55). There is only one cranium among the many bones.

The bear cranium from Nedre Vapstsjön shows an injury in the right frontal bone (Fig. 13a–b). The attack came from above, from the back and from the left side in case of a right-handed huntsman. The skull vault was damaged, and an opening of 22 x 13 mm was created. This kind of damage is called a buttonhole fracture, and fissures due to the reduction of induced tension run forwards and backwards.

If a spear had been used, it would have first penetrated the sinuses, then the soft brain tissue and at last damaged the relatively weak bony structures of the skull base. No damages are noted in the skull base, however. Thus, we judge this injury to be a result of a hard stroke by a club or another blunt and heavy weapon. This injury alone would not have killed the bear, as it caused damages no deeper than the sinuses of the skull. However, this was a rather powerful blow that fractured the bone walls. It may briefly have paralysed the bear, making the kill by other hunters somewhat easier.

Spildra, Kvænangen, Troms, Norway (bear grave C)

The Sámi buried at least four bears in a small valley (Fig. 14) on the island of Spildra, Norway (Iregren et al. 2017). Ingrid Sommerseth reports that two of these burials were dated by Audhild Schanche in 1994. Their radiocarbon dates are recalibrated to AD 1030–1220 (T-11214) and AD 1132–1328 (T-11215; Sommerseth 2021, table 1).

In the bear graves Spildra A (formerly I) and B (formerly II; Iregren et al. 2017, table 1) no crania were found during the investigation in 2013. From bear grave C, however, a bear skull with a severe injury was examined (Fig. 15a–c). A heavy crack surrounds the braincase of this bear on almost all sides. The fissure passes through the parietals and runs to the right temporal bone. From there the fissure runs backwards almost to the occipital crest. On the left side a small fissure approaches the sagittal crest. On the ventral side of the skull a massive crack is seen. The maxillary bones seem to have been separated from one another, and a suture closed by age has been split open again due to the force applied. An impact mark, about 15 mm long, is visible close to the sagittal crest. The symmetric damages clearly demonstrate the application of blunt force, P. Krantz notes.

The following interpretations were made: The blow was directed from above, most likely when the bear was about to leave the den. A heavy object, with a rather smooth surface, inflicted the injuries. It might have been the neck of an axe, as it caused the entire braincase to crack. The force probably induced a concussion of the brain, so the bear might have been unconscious. A spear (or a knife) probably ended the bear's life. These heavy damages indicate a strong hunter with good knowledge of anatomy and vulnerability of the bear, as P. Krantz argues.

In all these instances, we notice that the hunters' attacks most likely occurred at the den. One hunter seems to have been positioned above it. He had the important task to strike as hard as possible, when the head of the bear was first visible and in reach, as it started to leave the den. Axes, spears and perhaps clubs seem to have been utilised. Most likely both the edge and the neck of an axe were used. It should be noted that the island of Spildra is too small (30 km^2) to hold a bear population. Female home ranges amount to 100–300 km^2 (only 100 km^2 in the case of females with their cubs of the year) whereas in the case of male bears, it is 300–1,000 km^2 (A. Zedrosser, pers. comm.).

This small study of five hunting parties reveals the following results: one bear dead through the first attack, one bear immediately unconscious, and three occasions when the hunt must have continued longer. The Sámi must, in all ways, have tried to avoid a hazardous struggle in the open space although such scenes are often depicted in Sámi art. Of course, this has happened, and the happy outcome of the event would have been retold. In a painting by Wallander we can observe a hunting party with many weapons in use, such as guns, axes, and spears, i.e. all the kinds of weapons discussed here (Fig. 11). In this picture there is also a brave dog, as sometimes shown in Sámi art. The presence of dogs in the bear hunting parties might, however, be questioned, if we trust some experiences from the early 20th century (Toulja 2007).

Hindering the bear from leaving the den

The injuries found all give the impression of the bear having been struck from above. It also seems as if Sámi hunters in all cases have tried to hit the bear as soon as it was starting to move from its hibernating position. We suppose that they tried to incapacitate the bear as efficiently as possible, before it broke out of the den. This strategy was essential for the success of the hunt and to avoid human casualties. In a couple of complementary sources, we have evidence of supporting tools during the hunt, which might have been very important to reach this goal.

An intriguing photo was first published in a book on bears by H. Zetterberg (1879–1961) (Fig. 16; cf. Zetterberg 1951; Zachrisson/Iregren 1974, 82 fig. 86). The photo shows the beginning of a hunt at a den in southern Lapland in 1910. The hunters use a couple of long rods blocking the exit of the den, thus for some short moments hindering the bear from leaving it. This would be one way to slow down the motions of the bear and leave some more time for the hunters better to hit and incapacitate their prey.

Bear spears in museum collections in Sweden

Regarding weapons, I have mapped bear spears in the collections of some museums digitally: Ájtte (Swedish Mountain and Sámi Museum), the County Museums of Norrbotten, Västerbotten, Jämtland and Dalecarlia, the Skellefteå Museum, and Silvermuseet in Arjeplog (Table 5).

There are more county museums in Sweden owning Sámi spears, but I have concentrated upon museums in the counties were bear graves have already been proven. I must stress that I have received important help from many museum curators (see Table 5 for the size of the spears and spearheads). Note that I have only included those spears where measurements and/or other interesting details were available to me. A more detailed analysis of the spears is available in Swedish on the web in the regional journal "Västerbotten" (Iregren 2021).

The bear spears are quite long, longer than a man's body height (Table 5; Fig. 17a, c). The total length does not seem defined as it varies from 168 to 266 cm. Many spears exceed 200 cm in length. The variation is spectacular. The length of the spears most likely depends on the bears' general size, and furthermore every hunter probably adapted the spear to his own comfort and preferred mode of

use. In today's sports (javelin throw), however, the javelin's length is defined to 260–270 cm,[1] so some bear spears hold a substantial length.

However, the long spears seem to us to have been rather difficult to manoeuvre when one is close to a prey. On the other hand, the length made it possible to reach the animal from a slightly safer distance. Heidi Henriksson argues that a bear spear was a shock weapon for use at close distance and not intended for throwing (Henriksson 1978, 29–31). Leif Braseth, however, claims that the spear could be used both for throwing and at a close distance (Braseth 2014, 99). The material of the spear shaft is always wood. The catalogues inform that the shafts were often made of birch wood. The spearheads were made of iron.

Also, the length of the spearhead varies, from 15 to 48 cm, and many of them are slender and pointy (Table 5; Fig. 17e; cf. Iregren 2021, 12). Their cross section is frequently rhomboid (Fig. 17d, f) and the diameter 11 to about 55 mm (Table 5). The hunters have rarely marked their initials, the year of use or time of manufacturing (Fig. 17g). Decorations might occur at the spearhead (Fig. 17f), or at the piece of copper or brass linking the head to the shaft (Fig. 17e; cf. Iregren 2021; see also the former spear from Inari [later tansformed into an ice axe], northern Finland in Fig. 17h). There might be chronological or geographical variations within the bear spears, even if this is not clear today.

The injuries recorded here seem to fit the thinner types of spearheads. The bear bones in Sörviken, Gråtanån, and Nedre Vapstsjön all demonstrate traces of hunts that took place later than AD 1533 (Table 4). Spears and axes were very important in hunting predators (bear, wolf, lynx; Björklöf 2010). They all seem to have been hunted with the same kind of spear, but other methods were also used (cf. Henriksson 1978, regarding bear hunting pp. 37–40).

Hunting seasons

There are scientific possibilities to evaluate the period when hunting took place. This question is also pinpointed by the knowledge that many bears were hunted at the den. The act of ringing (locating by searching in circles) the bear is treated in many sources; a Sámi hunter may track a bear down during several days, when it is searching for a suitable place to den. Finally, this place is found and marked for the forthcoming hunt (Schefferus 1956, 261–262). The search for a suitable bear, before its going into hibernation, often took place in October, it is written. Later in the winter a group of huntsmen returned to kill the bear.

Reports on the time of hunting exist in historical sources. Schefferus (1956, 262) mentions that among the Sámi the bear hunt took place in March or April, when skiing could be at best carried out in middle and northern Sweden. The frozen crust of the deep snow cover should bear the weight of a human, but not of the bear (Fjellström 1981, 8). Zachrisson/Iregren (1974, 79–81) mention more sources on this topic.

Turning to game biology of today, Evans et al. (2016) have investigated denning in bears. In conclusion they state: "Hibernation in brown bears seems to be initiated based on environmental cues and terminated due to physiological cues" (ibid., 12). Evidently, there would have been an extremely short period, perhaps only a few days, when the tracking could have taken place – just when it starts snowing, when snow is still scarce, and the bears get ready to den. All bears enter their dens when the snow begins to fall, the pregnant females even earlier.

My study of the bear graves demonstrates that in many cases the hunt took place at the den and during the winter season. Thus, the human behaviour and the season mentioned in the sources are confirmed. Table 6 presents the results of a study of the bears' age. Bears of all ages were hunted, consumed, and buried.

1 For men; cf. Javelin Throw: www.en.wikipedia.org (accessed 14.08.2020).

A good possibility to find out more about the time of death is to investigate the teeth of the bear. Game biologists, working in the northern hemisphere, have for decades made thin sections of teeth of for example wolf, bear, and elk to understand age-composition and changes in game populations (Lieberman 1994). The physiology behind the studied structures of the teeth is the following: Animal species live, behave and eat differently during the seasons of the year. Increment bands are regularly formed in the cementum at the roots, as summer and winter bands. Due to differences in growth, the orientation of collagen fibres shift, and these bands can be recognised. When the outermost layer is identified under the microscope, one can decide upon the season of death (Lieberman/Meadow 1993).

In 1988 I received support to cut and evaluate bear teeth from Enid A. Goodwin in the Alaska Dept. of Fish and Game, Anchorage, United States. Four bear teeth from small bone samples collected at a Sámi sacrificial site in Sweden (Unna Saiva) were successfully treated and proved informative. Some teeth could not be evaluated. On the individual level, the investigation gave two important results – the bear's age at the time of death and the season of death.

My data are based on thin sections of roots. The lower fourth premolar of the bear's mandible was used. The results enlighten the lives of four bear individuals who were of different age (4–10 years) when killed. The kills might all have been executed at the bear's den. As demonstrated, the results indicate a certain variation in hunting periods – both winter and late winter to spring.

Evidently, the archaeological and zooarchaeological evidence well agree with the written sources. The hunts were induced by climate, weather, and bear biology. But it would certainly be valuable to follow up this topic further and investigate a much larger number of bear remains. Also, individuals from bear graves ought to be included.

Bear feast and ceremonies performed

During archaeological investigations light has been shed upon how the bear carcass was treated, how the bones were used in reconstructing the bear's body, and how the grave was built in every detail. I have here assembled data on how the bears of Gällholmen, Sörviken, Gråtanån, and Karats were dealt with.

Skinning, parting, cooking, and consuming the bear

The skinning and parting process of a prey is always adapted to the species killed and the rules of culture and believes. Deer are flayed in a way that suits their anatomy, and in predators the skins are also taken care of in an appropriate way.

In the typical bear burials from Gällholmen, Sörviken (Zachrisson/Iregren 1974, table 1) and Karats (not complete when found; Mulk/Iregren 1995, table 4) no terminal phalanges have been included in the burial. I therefore interpret the bears to have been flayed and that the pelt, with the third phalanges in their places, was utilised separately. In historical sources, ceremonies during the bear feast also included the use of the skin. For example, when the eating was over, the women, shooting blindfolded with a bow and arrow or throwing alder sticks, should try to hit the skin (Fjellström 1981, 32).

However, in Nåttinäset and in Aspnäset one single third phalanx was recovered, but these bears were not found complete. In the Gråtanån bear grave seven of these phalanges were recorded. One possible explanation for the presence of the many terminal phalanges in Gråtanån might be found in the historical records presented by Fjellström (1981, 15–17). He refers to an old tale of a Sámi family where a woman marries a male bear. Later she returns to her mean brothers, and they go bear hunting. After the killing of the "bear husband", the son of the human-bear couple collects all the

bones, wraps them in the bear skin and buries all. Evidently, questions remain regarding the presence of terminal phalanges in bear graves. Their presence might also relate to the custom of consuming the edible parts of the bear paw.

Among circumpolar peoples many sources mention rituals connected to the head in general as well as the tip of the bear's nose (see Zachrisson/Iregren 1974, 85 with references). I have thus investigated the bones of the crania surrounding the olfactory organ carefully, the *Maxillae* and *Ossa incisivii* left and right. In the skulls studied in 2020, marks related to ceremonies involving the tip of the nose have been observed only in one skull, Sörviken (Fig. 9c). A cut mark from a knife is seen on the right maxilla. Fjellström (1971, 24, 30) described rituals concerning the nose.

In historical sources regarding Lapland, it is mentioned (Fjellström 1981, 27, 30) that particular Sámi rituals involved the bear's tail. This tradition has so far (Zachrisson/Iregren 1974, 85, 86) not been documented in Sámi bear graves.

Use of the bear's head

In the historical sources it is firmly decreed that the bear skeleton should not be harmed during cooking and feasting. This agrees with the archaeological material regarding the bear's head, shoulder blades, and a few other bone elements, as some vertebrae and bones of the paws. Sometimes we can, nevertheless, trace injuries from the hunt (see above).

However, in some burials there are clear marks of removing the mandibles from the skull. Cut marks can be observed in the upper ascending part (*Processus coronoideus)* of the lower jaw in the bear graves from Sörviken (left side), Gråtanån (left side; Fig. 18), and in the two individuals from Öhn (Fig. 19).

Use of the bear's tongue, lower jaw, brain, and spinal column

The tongue consists of bundles of muscular fibres and proves a good piece of meat. The practice of eating the tongue has been recognised in prehistoric sites, as for example at the Mesolithic settlement Bökeberg in Scania (Eriksson/Magnell 2001, 69). When cutting loose the tongue it is difficult not to touch the jawbones with your knife, as the cutting of the strong chewing muscles requires some effort. I have observed cut marks that might be related to such a procedure in one single mandible in the Gråtanån bear grave. Breaking or splitting of the jaw to consume its fatty tissue was not allowed due to the traditions (Zachrisson/Iregren 1974, photos pp. 50–65). This is otherwise a common behaviour in early societies (cf. Magnell/Iregren 2000; see Magnell, this volume, on Frösö).

In many societies and cultural groups, the fatty tissues of the brain have been of important use. It may be utilised during fur preparation or else consumed. I have looked for tiny cut marks in the finds, but damages related to removal of the brain cannot be identified in any of them. On the other hand, many vertebrae, except atlas and axis, were split longitudinally, which shows that the spinal cord was regularly consumed.

Traditions surrounding the paws

In two bear graves, Sörviken (Zachrisson/Iregren 1974, 25, 27) and Gråtanån (Melander 1980), many small bones from the paws have been deposited together. It is also evident that some metapodials and phalanges must have been connected by for example sinews at disposal (cf. Fig. 5). In the historical sources, Zachrisson and myself did not find any mention of acts involving the bear paws. The fact that such bone collections were found in two bear graves indicates that the depositions did not occur by chance. Levi Johansson, dealing with old food practices among the Sámi in the county of Jämtland (Johansson 1947, 95), mentions that reindeer feet were cooked and eaten as "pig feet". Probably the paws of the bear were eaten in a similar way and the bones were afterwards deposited together.

In the historical sources different possibilities are mentioned regarding how to choose the location for cooking, eating, and burying the bear. Huts must be built, or otherwise huts in the dwelling were chosen. According to Schefferus (1956, 264–265) a special hut is built for the men, where the bear should be skinned, dismembered, and cooked. Another hut was erected for the women, as they were to be separated from the dangerous power of the bear and the huntsmen. Fjellström (1981, 30) further specifies that the bear was prepared, boiled, consumed, and then buried, in one and the same place.

Turning to archaeology, one aspect that has often been overlooked during the excavation of bear graves is searching for traces of the bear feast and for possibly related constructions. Many have read about this lavish party in the sources (Schefferus 1956, 264–265; Fjellström 1981, 28–29), and we have noticed sites with clear archaeological indications of the event. At five sites it seems as if the bear has been cooked and consumed close to the place of its burial, and most likely relatively close to the Sámi *siida*.

Traces of cooking, a coal layer and a hearth, were found under the bear grave at Gällholmen (Fig. 20; cf. Zachrisson/Iregren 1974, 18 fig. 6). As one bone, evidently belonging to the buried bear, was found in the coal layer, the connection in time is proven. Unfortunately, the coal layer has not been dated.

At Karats, a hearth was excavated about two meters from the bear grave (Mulk/Iregren 1995, 18–20). The hearth was clearly a part of a hut. The radiocarbon dates indicate possible simultaneous construction of the two structures (Table 4). The Sámi may have used this small island repeatedly for bear feasting. A number of hearths and pits prove a long-term use. The corresponding dwelling site was very likely located at the nearby shores of Lake Karats (cf. Mulk/Iregren 1995, fig. 2).

The third example is a well investigated bear grave with surrounding areas excavated at Gråtanån. Close to the burial, an earth oven was found as well as a possible hearth. Other results prove human activities on several occasions (Table 4). The supposed hearth was located about seven to eight meters from the bear grave. It was most likely situated in a hut but could not be dated. Ernst Manker registered a Sámi dwelling site located about 400 m northeast of the bear grave in 1950 (RAÄ[2] 574, confirmed during field work in 1975; see Melander 1980).

Also, at Grundskatan a larger area with several huts and other constructions was excavated. The bear grave was located inside a hut, covered by a cairn, and placed very close to a hearth (Fig. 21; cf. Broadbent 2005, 25–31). The hearth and the burial yielded similar dates (Table 4). At the site of Nåttinäset patches of coal and burnt sand were found together with the remnants of the bear burial (Zachrisson/Iregren 1974, 30).

Another possible proof of these traditions might have been found in Sörviken. A hearth was found close to the bear grave (Zachrisson/Iregen 1974, 20). To my knowledge, the hearth has not been dated, but both structures were located at a Sámi dwelling site, however, overlaying a find spot of Stone Age character.

As pointed out it is claimed that the bear, if possible, should be brought to the Sámi village for consumption and feasting. In Karats this does not seem to have been the case, on the contrary. The bear has been transported over the ice to a close inlet. A similar situation is represented by the Gällholmen bear grave. It was also established on an island (Zachrisson/Iregren 1974, 15–16). It must be remembered that islands held particular connotations among the Sámi. Human burials in Sápmi were for a long period located on islands, capes, and isthmuses (Fossum 2006, 91–93). The closeness to water is striking.

2 Official numbering of ancient monuments in Sweden (found in official digital registers of Riksantikvarieämbetet).

Here I would like to add a complementary remark. I believe that water and the bear were closely related in traditional beliefs, and this ought to be further researched. Knut Helskog has discussed this theme thoroughly in connection with the studies of bears in rock art at Alta, Norway, and he also included the cliff structures in his arguments. He mentions water as essential and stresses the possibility of bears to reach all other worlds and to travel through these (Helskog 2012, 220–223). Some of the bear graves in Sweden have obviously been deliberately located at inlets or other natural structures in lakes, although we can understand that the dwelling site lay elsewhere but near (Gällholmen, Karats, Nåttinäset). Furthermore, most bear graves are located close to water, often lakes, as for example, the ones from Sörviken, Värjaren, Långbäck, and Grundskatan (seashore).

The feast and the burial can also take place closer to the site of killing, according to Edsman (1994, 65). Fjellström (1981, 19, 21) instead stresses that the ceremonies should be performed nearer to the habitation. The above-mentioned archaeological examples definitely demonstrate that the preparation of the bear and the feasting took place very close to the burial of the bear bones.

From the island Spildra in Northern Norway, we also gained the new and important knowledge that different social units might have used specific areas for bear burials and other bone depositions. In this small island of about 30 km^2, there are two areas where bears have been buried (Iregren et al. 2017; Sommerseth 2021). This island is, however, much bigger than Vägvisarholmen in Lake Karats and Gällholmen in Lake Storuman.

Thoughts about future work on Sámi bear bone finds

Bear graves have, so far, been found in the counties *(län)* of Norrbotten, Västerbotten, Jämtland, and possibly ritual remains of bear in Ångermanland. We should, however, keep our eyes open to identify these remains in other counties of Sweden, as for instance Dalecarlia, but also closer to the coasts of the Baltic Sea. Conspicuous unburnt bear finds from Dalecarlia ought to be studied further (Iregren 2022).

We should further search for more graves in the vicinity of an earlier find, as the investigations at Spildra encourage us to do (Iregren et al. 2017). Similar locations in Sweden might be Nedre Vapstsjön, Långbäck, Värjaren, and Öhn.

In many important respects the Sámi, also during recent centuries, followed the ceremonial rules and hunting instructions, mentioned in the preserved written sources from the 17th and 18th centuries. These concern the burial of the whole bear, which means the burial of all its bones, including the skull, the tail, and the tip of the nose. During fieldwork we have identified the intention to mimic the anatomy of the bear in the burials. The neck vertebrae have been positioned close to the head, and other vertebrae and bones have been laid out to give the impression of a backbone. Furthermore, the many bones of the paws may be placed together. The prohibition to injure the bones resulted in a complete skull, as well as complete jaws and shoulder blades.

When searching for constructions linked to settlements, this has been discerned through traces of hearths and huts found, also in accordance with historical records. However, this topic needs closer investigation. Also, as already stated, we ought to search for more bear graves in an area where one has already been found. Was this really the result of one single event? The fact that bear graves have always come to light unexpectedly and by chance may have fooled us. There is also a gap in our knowledge about the use of organic containers to collect and bury the bones.

We have rather little knowledge on bear graves in mountainous areas in Sweden. If a burial is placed in a crevice or among boulders, we must reflect about these constructions and their details. We should, for instance, check the arrangement of bones in crevices or the like. Fjellström (1981, 31) notes that the Sámi could also choose to reconstruct the bear in a vertical position. In this case, the deposition should start with the hind parts of the animal, he writes.

On the other hand, there are indications for a freer attitude to the traditions, too. The most conspicuous trait is that all bones with marrow contents have been cleaved, though carefully deposited. The degree of fragmentation varies, but the occurrence of splitting correlates neither to the dating nor to the Sámi geographical area, as far as I can see. Here I want to clarify the information by Zachrisson (1983, 88) in her article on "New South Samish Finds": The bones in the bear grave at Värjaren *were cleaved* to get at the marrow, but the bone fragments seemed bigger than in other burials.

Some of the statements from the sources which still need to be investigated further concern the ceremonies around the nose and the tail of the bear. Regarding zooarchaeology, questions such as the skinning and general dismembering of the bear remain to be enlightened. According to the sources, women and men were allowed to eat different parts of the bear only. Can this tradition be spotted on bones or in the depositions within the burial? A detailed inspection for hunting injuries on the bones of the bear's body might also give new results. Chemical analyses to identify, for example, remains of fat in the bear graves might be useful. Isotopic investigations of bear bones might enlighten the size of the area used for bear hunting by the *siida*. Further, determining the tree species of the twigs, logs/planks in the burials would add more information.

There is also a need to go deeper into some aspects of behaviour during the ceremonies. Why have brass chains been fastened to bears' crania? These chains deserve a closer look, not least because brass was an important and holy metal among the Sámi (Fjellström 1981, 21–22, 30–33; Bäckman 1981, 52). Brass rings were used on several occasions in connection with the bear feast, too, for instance during the preparations for the feast, in ceremonies directed to the bear, and as a protection of the women but also of the reindeer involved in the transportation of the bear. It was further applied for protection in connection with human burials (Schanche 1997, 242–243). Can the dating of the chains from Värjaren and Namdalen further be made more precise? Zachrisson (1983, 88, 95) remarks that the design is ancient. Further, she notes that brass rings in a Sámi context are not known earlier than from the 16th century.

Further on, why were the bullets put in the bear graves? Bullets are found not only in such burials, but also in settlements as Jättens grotta (Giant's cave) at Lake Kakirjaure in Sweden (Mulk 1994, 90–91). Could these depositions in graves be regarded as offerings (cf. Högström 1980, 210) or, more likely, burial gifts? So far, we do not know much of the Sámi casting procedures and the composition of the lead alloy.

Another difficult question that we ought to think much more about is: How can we perform a meaningful separation between bear bone depositions (if there are any), bear graves and bear finds from sacrificial sites respectively? And how can we learn to understand this different behaviour? Mulk (2005) made an important contribution to enlighten this when she found out that the objects and the bones/antlers, respectively, were not deposited during identical time periods in Sámi sacrificial sites (see also Spangen et al., this volume, on bear remains from Sámi offering sites).

In Sweden we have been slow in dating the bear graves. This has, however, partly been dealt with in this contribution. Since the investigations by Mulk/Iregren (1995) and Broadbent (2005) a much larger time span of their occurrence has been documented than before. The new date of the Nåttinäset bear grave (Ua-67288: 1023–1150 cal AD, 1-Sigma) further strengthens the evidence for this long tradition. It might expand even further back in time. Thus, we need to date the bone depositions more swiftly in the future, not to delay research or the possibility to ask new questions.

Acknowledgements

The costs of the important dating of bear finds have been covered by financial support from the County Museum of Norrbotten (Nåttinäset), the Department of Archaeology and Ancient History,

Lund University (Gråtanån, Långbäck), the Swedish Museum of Natural History through a bear project run by Erik Ersmark (Öhn) and, finally, Öhns byalag (the village community of Öhn) and Ströms Hembygdsförening (the Ström Local History Society). Markus Fjellström kindly performed some extractions of collagen to ease the dating procedures.

Employees working in a great number of museums have given me important help in answering questions, providing me with samples, bone material for study and interesting photos. I here want to mention Johnny Karlsson, Swedish History Museum, who gave me the opportunity to study many of the bear finds in their collections. He also kindly took some of the photographs included in this article. Furthermore, I have received most valuable help from the County Museums of Jämtland, Västerbotten, and Norrbotten. Other museums in Stockholm, Lund, and in Northern Sweden also supported me during my work, such as the Swedish Museum of Natural History, Lund University Biological Museum, Ájtte – Swedish Mountain and Sámi Museum, Silvermuseet in Arjeplog, and Skellefteå Museum. My colleague Jan Storå, Osteoarchaeological Research Laboratory, Stockholm University, helpfully provided me with most useful data on the bear find from Grundskatan.

I have further received valuable information from Kjell-Åke Aronsson (pers. comm.), senior researcher at Ájtte. My former colleague Anders Ödman helpfully shared with me his experience and expertise in smithing and of guns. Ingvild Larsen, senior advisor at the Sámi Parliament, Norway, has supported me in many ways during this writing and kindly shared her knowledge with me. Högne Jungner, former leader of the Laboratory of Chronology, University of Helsinki, has been an important partner during the intriguing discussions of the datings. He also performed all calibrations and created Figure 8.

Further, important discussion partners have been Erik Ersmark, Natural History Museum, an aDNA specialist, and Markus Fjällström, Department of Archaeology and Ancient History, Lund University, Sweden, a specialist in isotope studies. Both have lately been working on bears from different aspects. I also want to thank Enid A. Goodwin, who worked in the Alaska Dept. of Fish and Game, Anchorage, US. She kindly performed the thin section analyses of bear teeth from the sacrificial site of Unna Saiva, Sweden.

Last but not least, I have received very important knowledge and support from two scholars in Lund. Associate professor Peter Krantz, former forensic pathologist, gave me invaluable help in studying the bears' injuries from hunting (from photos). Peter is also an interested hunter, and his skills and experiences were essential in evaluating and understanding the bear hunt. Finally, I want to mention my close colleague Ola Magnell, archaeozoologist at Archaeologists/Lund, the Swedish History Museum. Ola helped me understand the traces of cuts and blows, to enlighten the skinning and consumption of the bear, and also in finding examples to compare with. Boel Billgren scrutinised my English. My warmest thanks to all of you for your interest and invaluable support!

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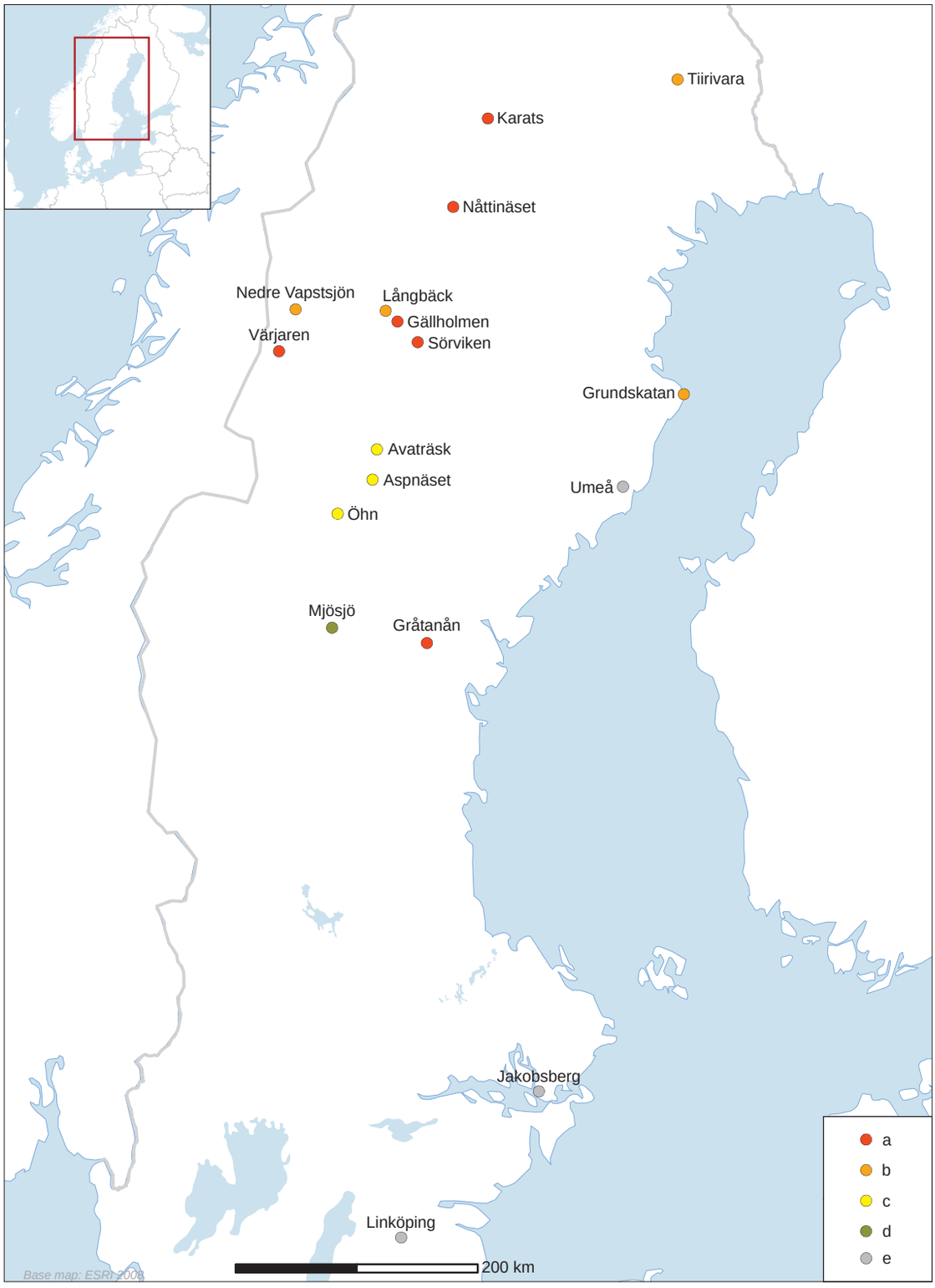


Fig. 1. Bear finds from Sámi areas in Sweden. The finds have been divided into five categories. a: Bear grave beyond doubt, with many parts of the bear skeleton and burial arrangements (bones, wood, birch bark, etc.); b: Bear find from a clear ritual context, often including many bear bones, sometimes with constructions or indications of observed traditions, possible bear grave; c: Bear find of clear anthropogenic origin (traces of [lethal] lesions, marks from cutting or marrow extraction); d: Known locality of bear find but with unknown context; e: Bear cranium of unknown original locality and context (map GIS department, ZBSA).



Fig. 2. A bear's head made of sandstone, used as whetstone, found at the dwelling site Lemnäset, Bodum parish, Ångermanland, Sweden. It dates to the period 4100–1700 BC (Swedish History Museum [SHM] inv. no. 27962, artefact on exhibition in the SHM; photo J. Karlsson, SHM).



Fig. 3. Rock painting of a bear at Ruändan, Storsjö parish, Härjedalen county, Sweden. The painting in red ochre is regarded to be c. 4,000 years old. This and other paintings are located in a mountainous area (photo A. Hansson, County Museum of Jämtland).



Fig. 4. The bear grave at Gråtanån (site no. 15), Vilhelmina parish, Lapland, Sweden, in an early stage of excavation. Vertebrae and ribs have been placed behind and close to the cranium (SHM inv. no. 31310; after Melander 1980, fig. 12).



Fig. 5. The bear grave at Gråtanån (site no. 15), Vilhelmina parish, Lapland, Sweden, during excavation. Many bones from the paws of the bear were located together in layer 3, and close to the cranium (after Melander 1980, fig. 15).



Fig. 6. Four lead bullets from a muzzle-loading gun were found in the bear grave at Gråtanån (site no. 15), Vilhelmina parish, Lapland, Sweden. They were located close to the cranium. Their diameters vary from 9.45 to 9.77 mm. These bullets have not been fired (photo J. Karlsson, Swedish History Museum).



Fig. 7. Cranium from the bear grave at Värjaren (site no. 13), Frostviken parish, Jämtland, Sweden. Note the brass chain and ring fixed to the zygomatic bone. The find now belongs to the Museum of Ethnology, Hamburg, Germany, inv. no. 1795:1 (photo G. Jansson, Antiquarian-Topographical Archives [ATA]).

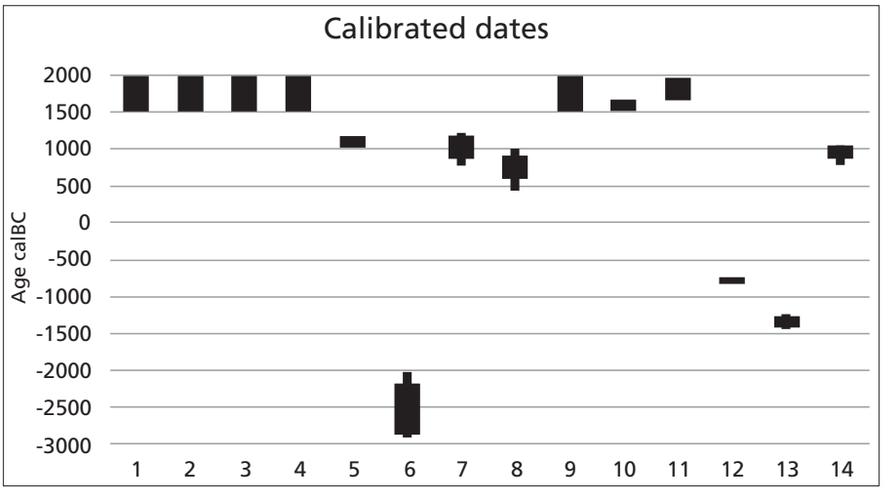


Fig. 8. Calibrated ^{14}C-dates of irrefutable bear graves, possible bear graves, and a couple of bear finds of unknown origin in Sweden. For numbers, see Table 4 (graphics H. Jungner, Helsinki University, Finland; modified by M. Bolte, ZBSA).

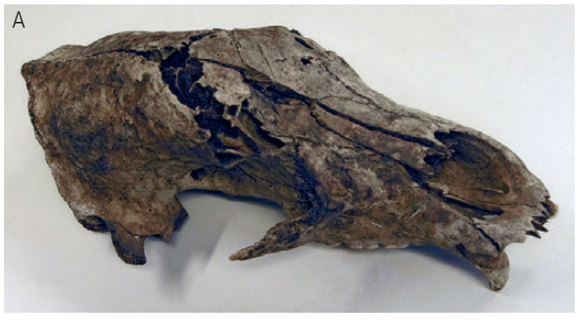






Fig. 9a–c. Cranium from the bear grave Sörviken (site no. 2), Stensele parish, Lapland, Sweden; SHM inv. no. 25465. The bear has been hit by a sharp axe across the forehead, presumably three times from the right side. The damages are at their deepest there. These injuries were lethal. In Fig. 9c the nose of the bear is visible from the right side. The bear has been cut by a knife in the right maxilla. This cut is most likely linked to ritual behaviour in connection with the tip of the nose (photos E. Iregren).





Fig. 10a–b. The cranium from Avaträsk, Dorotea parish, Lapland, Sweden (site no. 9). Find circumstances are not known; Swedish Museum of National History, inv. no. 583087 (formerly 3087). The bear was most likely hit by a spear, which resulted in an injury with a symmetrical opening located close to the bear's left eye. The injury was not lethal. Note that the cranium has later been damaged during storing (photos E. Iregren).



Fig. 11. A bear hunting party, painted by the artist J. Wilhelm Wallander (1821–1888). It is interesting to see that all the weapons discussed in this paper are used by the hunters in the picture – spear, axe, and gun. Both Sámi men and settlers participate. The picture seems relatively realistic, as one person is injured and lies in the snow. The hunter close to him has abandoned his gun and switched to the spear. However, the spear seems somewhat short. The picture was painted in 1858 and first published in "Svenska Folket sådant det ännu lefver wid Elfwom, på Berg och i Dalom" by Carl Anton Wetterbergh (Stockholm 1865; see Ahrland/Magnusson, *this volume). The reproduction is kept in the Royal Library in Stockholm. The oil painting is owned by Nordiska Museet, Stockholm.*

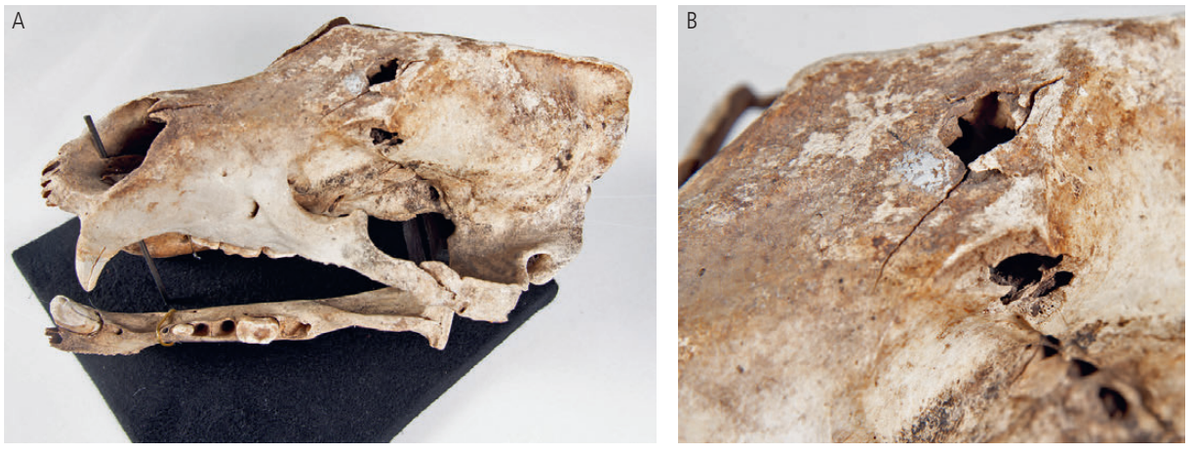


Fig. 12a–b. Bear cranium of unknown origin, originally from a school collection in Umeå (site no. 7), now in the County Museum of Västerbotten, Sweden (inv. no. Vbm 14070). The left frontal bone has been struck once, most likely by a spear. Note the fractures running from the entrance opening. The injury was not lethal (photos K. Stenman, County Museum of Västerbotten).



Fig. 13a–b. Irregular opening of the forehead of a bear from Nedre Vapstsjön, Tärna parish, Lapland, Sweden (site no. 3), probably caused by a strike with a heavy and blunt weapon. A club or the neck of an axe might have been used. Fractures run both upwards and downwards on the cranium. This kind of injury is called a buttonhole fracture, and fissures due to reduction of induced tension run in different directions. This injury did not cause the death of the bear (SHM inv. no. 30 691; photos E. Iregren).



Fig. 14. Four bear graves have been documented by Norwegian archaeologists in this small valley (Skagedalen) at the west coast of the island of Spildra, Kvænangen, Troms, in Northern Norway. Ingvild Larsen from the Sámediggi and responsible for the investigations in 2013 is visiting the sites (photo M. Chruickshank, Sámediggi).



Fig. 15a–c. The bear in the grave Spildra C (III), Kvænangen, Troms, in Northern Norway, was struck during a fierce attack, supposedly at its den. Cracks created by blunt force run through the bone walls surrounding the brain on all sides. The neck of an axe might have been used as the entire braincase is cracked. The bear became unconscious and was then easy to kill (photos E. Iregren and I. Larsen, Sámediggi).



Fig. 16. Photo from Hilmer Zetterberg's publication on bears from 1951. Possible Sámi hunters at the den of a bear in southern Lapland in 1910. Guns and spears, but also long rods are used to prevent the bear from leaving the den quickly (after Zetterberg *1951;* Zachrisson/Iregren *1974, fig. 86).*



Fig. 17. Bear spears from Sweden.

Fig. 17a. Bear spear in the collections of Ájtte Swedish Mountain and Sámi Museum, Jokkmokk, inv. no. JM 1439. Note the long shaft (photo Ájtte, Swedish Mountain and Sámi Museum, Jokkmokk).



Fig. 17b. The same spear as in Fig. 17a. Note the slim blade of the spearhead and its sheath. A piece of copper further connects spearhead and shaft, protecting the sharp blade. The decoration is commented upon in Iregren *2021, 13 (photo Ájtte, Swedish Mountain and Sámi Museum, Jokkmokk).*



Fig. 17c. Spear from the ethnographical collections of Ájtte, Swedish Mountain and Sámi Museum, Jokkmokk, inv. no. 03.1.30. Note the part of brass between shaft and head and the protected part at the rear end of the spear, the ferrule (photo Ájtte, Swedish Mountain and Sámi Museum, Jokkmokk).



Fig. 17d. The same spear as in Fig. 17c. Note the (often occurring) rhomboid shape of the spearhead (photo Ájtte, Swedish Mountain and Sámi Museum, Jokkmokk).



Fig. 17e. Head of a spear, also used as a ski pole, in the collections of the County Museum of Västerbotten, Umeå, Sweden (Svenska skidmuseet); a relatively short and pointy head combined with a long, decorated brass part (photo County Museum of Västerbotten).



Fig. 17f. Spear head in the exhibitions of the County Museum of Västerbotten, Umeå, Sweden (Svenska skidmuseet), inv. no. SSM 80275; a rhomboid head with decorations, rivets and a part of brass (photo H. Forsberg, County Museum of Västerbotten).

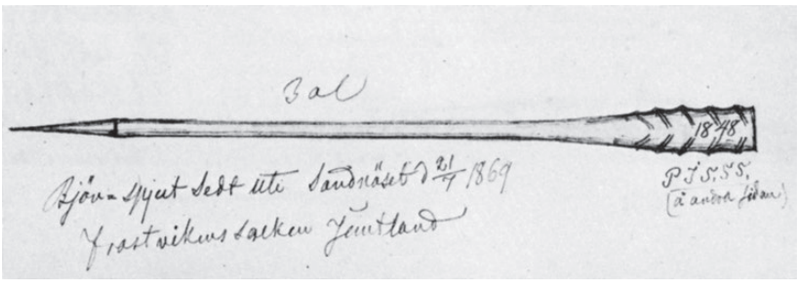


Fig. 17g. Drawing by the famous ethnographer Nils Månsson Mandelgren, 1869, showing a bear spear (County Museum of Jämtland; inv. no. JLM 77s1213 40–41). The spear was observed at Sandnäset, Frostviken parish, Jämtland, Sweden. Note the two markings on the shaft of the spear: the year "1848" and the owner's/owners' initials "P I S. S S.". The length of the spear is about 178 cm. See Table 5. The drawing was first published in the journal "Jämten" (1978, 107).



Fig. 17h. A former bear spear from the area of Lake Inari in Northern Finland, transformed into an ice axe; now kept in the County Museum of Västerbotten, Umeå, Sweden (Svenska skidmuseet), inv. no. SSM 80481 (photo L. Trygg, County Museum of Västerbotten).



*Fig. 18. Left lower jaw of the bear from Gråtanån (site no. 15), Vilhelmina parish, Sweden, SHM, inv. no. 25465. The inside of the ascending part of the jaw (*processus coronoideus*) displays a number of fine cuts from a knife. Apparently, the jaw has been separated from the skull before the cooking of the bear (photo E. Iregren).*



Fig. 19. Mandible of the bear from Öhn, Strömsund parish, Jämtland, Sweden (site no. 16), kept in Lund University Biological Museum, inv. no. Lzzz/5006. The inside of the lower jaw displays a number of fine cuts from a knife. Evidently, this find has an anthropogenic origin (photo E. Iregren).

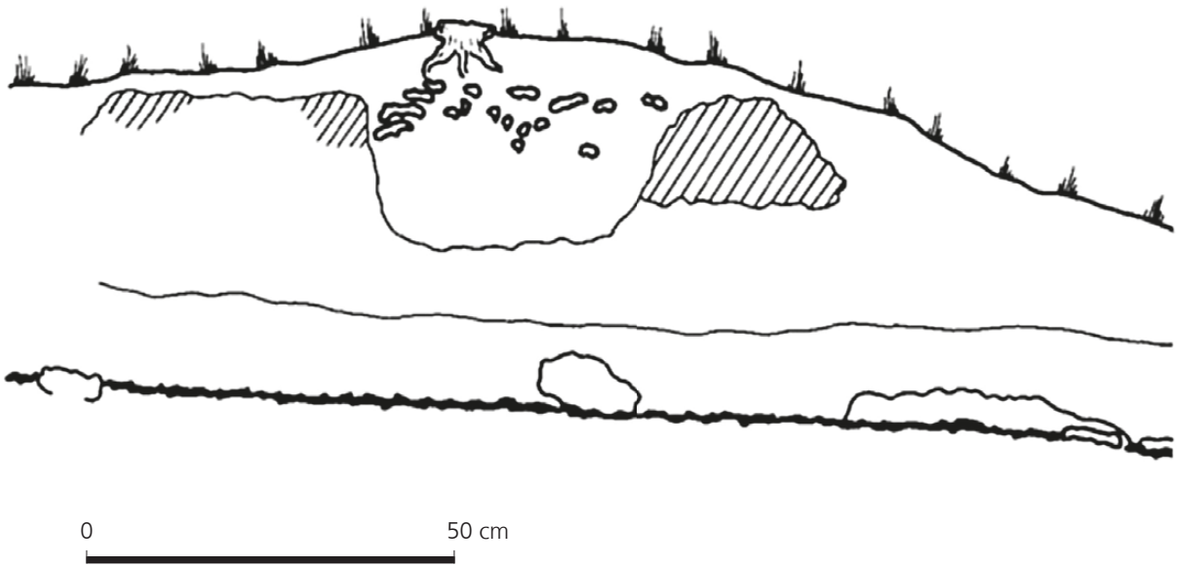


Fig. 20. The profile through the Gällholmen bear grave (site no. 1), Stensele parish, Lapland, Sweden. A layer of coal was found c. 20 cm below the pit of the grave. Presumably this is the rest of a cooking fire during the bear feast. Also, one bear bone missing in the burial was recovered there (after Zachrisson/Iregren *1974, fig. 6).*

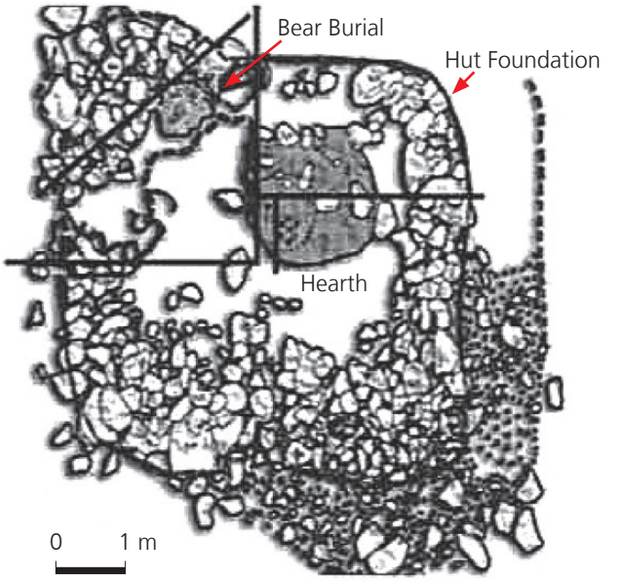


Fig. 21. Drawing of structures at site no. 18 (Feature 4) at Grundskatan, Lövånger parish, Lapland, Sweden. The hut foundations, the bear grave, and the hearth are all visible (after Broadbent *1987; 2005, fig. 16; modified by M. Bolte, ZBSA).*

Table 1. Sites with proven or supposed Sámi bear graves and a few bear finds of unknown provenance in the Swedish part of Sápmi (information on site nos. 1–11, 13–14, 16–17 after Zachrisson/Iregren 1974 and references therein; 12–14 after Mulk/Iregren 1995; 13 after Zachrisson 1981, 85–86; 1983, 88, 95; 15 after Melander 1980; 1981, 78–81; Zachrisson 1983, 89–90; 16–17 after Iregren 1973; 18 after Broadbent/Storå 2002; Broadbent 2005, 24–25; Broadbent 2010).

No.	Site	Locality	Coordinates	Museum, inv. no.	Further information
1	Gällholmen	Stensele parish, Lapland	N 7238730	County Museum of Västerbotten	Exhibited in the museum
		Lat. 65°16' N., Long. 16°47' E	E 582404	Vbm 21564	
2	Sörviken	Stensele parish, Lapland		The Swedish History Museum	
		Lat. 65°06' N., Long. 17°06' E		SHM 25465	
3	Nedre Vapstsjön	Tärna parish, Lapland	N 7255404	The Swedish History Museum	
		Lat. 65°25' N., Long. 14°60' E	E 488939	SHM 30691	
4	Tiirivara	Överkalix parish, Lapland		The Swedish History Museum	
		Lat. 66°46' N., Long. 22°23' E		SHM 30706	
5	Mjösjö	Junsele parish, Ångermanland		The Swedish History Museum	
		Lat. 65°16' N., Long. 16°47' E		SHM 34813	
6	Nåttinäset	Arjeplog parish, Lapland		County Museum of Norrbotten	Exhibited in Silvermuseet,
		Lat. 66°04' N., Long. 17°59' E		Nbm 40011:41	Arjeplog
7	Östra gymnasiet	Umeå		County Museum of Västerbotten	
				Vbm 14070	
8	Zetterberg			Jakobsberg	Private owner
9	Avaträsk	Dorotea parish, Lapland		Swedish Museum of Natural History	
				583 087 (formerly 3087)	
10	Aspnäset	Tåsjö parish, Ångermanland		The Swedish History Museum	
		Lat. 64°07' N., Long. 16°07' E		Dnr 7434/71	
11	Linköping				Private owner
12	Karats	Jokkmokk parish, Lapland	N 7401975	Ajtte, Swedish Mountain and Sámi Museum	Exhibited in the museum
		Lat. 66°41' N., Long. 18°48' E	E 666697	AJA:000174	
13	Lake Värjaren	Frostviken parish, Jämtland		Museum of Ethnology, Hamburg	
		Lat. 64°47' N., Long. 14°40' E		1795:1	
14	Långbäck 1:3	Stensele parish, Lapland	N 7241442	The Swedish History Museum	
			E 574052	SHM 30951	

Cont. Tab. 1. ▼

Cont. Tab. 1.

No.	Site	Locality	Coordinates	Museum, inv. no.	Further information
15	Gråtanån, Vojmsjön	Vilhelmina parish, Lapland	N 7195227	The Swedish History Museum	
		Lat. 62°52' N, Long. 16°47' E	E 584777	SHM 31310	
16	Öhn	Strömsund parish, Jämtland	N 7085587	Lund University Biological Museum	
		Lat. 63°90' N, Long. 15°46' E	E 522447	Lzzz/5006 Mandibula sin.	
17	Öhn	Strömsund parish, Jämtland	N 7085587	Lund University Biological Museum	
		Lat. 63°90' N, Long. 15°46' E	E 522447	Lzzz/5007 Mandibula dx.	
18	Grundskatan, Bjuröklubb	Lövånger parish, Lapland	N 7162882	Skellefteå Museum	
	RAÄ 78, A 4		E 817609		

*Table 2. Number of identified bone fragments (NISP) of bear (*Ursus arctos*), divided into body parts in bone collections (information on site nos. 1–10 after Zachrisson/Iregren 1974, table 1; 12–13 after Mulk/Iregren 1995, Bilaga 7; 14–15 new data presented here; 18 after Broadbent 2010, table 17). Bear finds represented by only parts of the head are not included here (cf. Table 3 and Table 1 for site nos.).*

Bone elements	**Site nos. and sites (see Table 1)**									
	1 (Gä)	2 (Sö)	3 (NV)	6 (Nå)	10 (Asp)	12 (Ka)	13 (Vä)	14 (Lå)	15 (Grå)	18 (Gru)
Calvarium	2	1	1	4		1	1	4	1	
Mandibula	2	2	2	2		3	4	3	2	5
Dens	1		1			1		2		50
Os hyoides		4								
Total	**5**	**7**	**4**	**6**	**0**	**5**	**5**	**8**	**3**	**55**
Vertebra	101	133	79	10		22	25	4	88	
Costa	113	73	74	10	2	19		1	58	
Sternum	5	2	1			1			6	
Scapula	3	2	8	1		2	1	1	1	
Humerus	24	23	18	1	3	2	3	1	11	1
Radius	11	13	11	1		4	1		11	1
Ulna	14	10	13	3	1	1	1		3	1
Coxa	19	7	16				4		12	
Femur	22	24	15				4		8	
Tibia	14	12	13	1	1	1	1		19	2
Fibula	2	3	3			5	1		3	
Extremity	1	4				5		2	24	6
Total	**326**	**306**	**251**	**27**	**7**	**62**	**41**	**9**	**244**	**11**
Os metacarpus	9	10	9	2	1	2				
Os metatarsus	8	10	9	3	2	3				
Metapodial bones	2			1		6			17	
Carpus	12	14	6		1	9				
Patella	2	1	1						1	
Astragalus	2	2	2			1			2	
Calcaneus	3	2	2			3			3	
Tarsus	10	10	2			5				
Carpus/Tarsus									23	
Phalanx I	15	17	4	2	3	3	1	1	16	
Phalanx II	10	17	2		1	5			14	
Phalanx III				1	1				7	
Os sesamoideum	18	46				8			18	
Os penis	1									
Total	**92**	**129**	**37**	**9**	**9**	**45**	**1**	**1**	**101**	**0**
Total identified	423	442	292	42	16	112	47	19	348	66
Unidentified	219	592	71	31	74	122		4	209	6
Number of individuals (MNI)	**1**	**1**	**3**	**1**	**1**	**1**	**1**	**2**	**1**	**1**

*Table 3. Number of identified bone elements (NISP) of bear (*Ursus arctos*) from sites where only parts of the head have been identified (cf. Table 1 for site nos.).*

Bone elements	**Site nos. and sites (see Table 1)**							
	4 (Ti)	5 (Mjö)	7 (Ös)	8 (Ze)	9 (Av)	11 (Li)	16 (Öh)	17 (Öh)
Calvarium	1	1	1	1	1	1		
Mandibula			2	2	2	1	1	1
Dentes				1				
Os hyoides								
Total	**1**	**1**	**3**	**4**	**3**	**2**	**1**	**1**

Table 4. Dating of irrefutable and possible bear graves. Dates on other close archaeological structures are also mentioned.

Site no.	**Site, locality**	**Find circumstances**	**Sample no.**	**Lab. code**	**Result BP**	**+/-**	**Result cal BC / AD (1-Sigma)**
1	Gällholmen Stensele parish, Lapland	Discovered in 1969 by locals, saved in 1970, excavated indoors in 1971 by archaeologist and zooarchaeologist	1	St-3770	<250		AD 1533–1950
2	Sörviken Stensele parish, Lapland	Found during archaeological fieldwork in 1955, excavated indoors in 1972 by archaeologist and zooacharchaeologist	2	St-207	215	60	AD 1533–1950
3	Nedre Vapstsjön Tärna parish, Lapland	Excavated in 1952 by ethnographer E. Manker	3 4	St-3993 St-3994	<250 <250		AD 1533–1950 AD 1533–1950
6	Nåttinäset Arjeplog parish, Lapland	Found in 1970, damaged, excavated by archaeologists	5	Ua-67288	982	33	AD 1023–1150
10	Aspnäset Tåsjö parish, Ångermanland	Found in 1971 during inventory by Swedish National Heritage Board; bones collected	6	St-10192	3965	165	2843–2206 BC
12	Karats Jokkmokk parish, Lapland	Found in 1983 in connection with archaeological fieldwork, damaged, excavated indoors in 1986 by archaeologists and zooarchaeologist	7 8	Ua-507 (tooth) St-11213 (birch bark from bear grave)	1035 1315	90 130	AD 893–1153 AD 607–879
13	Lake Värjaren Frostviken parish, Jämtland	Found by locals about 1914. Later sold.	9	St-7870	<250		AD 1533–1950

Cont. Tab. 4. ▶

Cont. Tab. 4.

Site no.	Site, locality	Find circumstances	Sample no.	Lab. code	Result BP	+/-	Result cal BC / AD (1-Sigma)
14	Långbäck 1:3 Stensele parish, Lapland	Inventories by locals. Excavation by archaeologist and zooarchaeologist	10	LuS-16014 (bone)	315	30	AD 1515–1639
15	Gråtanån, Vojmsjön Vilhelmina parish, Lapland	Found in 1979 during archaeological fieldwork, excavated immediately by archaeologists and zooarchaeologist	11	LuS-16013 (A3, bear grave, bone)	135	30	AD 1683–1936
				St-7397 (RAÄ 899, A1, earth oven coal)	1545	90	
				St 7398 (RAÄ 899, A1, earth oven coal)	1630	110	
				St-7399 (RAÄ 899b, earth oven coal)	1505	90	
16	Öhn Strömsund parish, Jämtland	Found by locals during peat digging in 1950	12	Ua-67671 (tooth, LZZZ/5006, Mand. sin.)	2618	29	809–788 BC
17	Öhn Strömsund parish, Jämtland	Found by locals during peat digging in 1950	13	Ua-66094 (tooth, LZZZ/5007, Mand. dx.)	3075	28	1400–1295 BC
18	Grundskatan, Bjuröklubb Lövånger parish, Lapland RAÄ 78, A 4	Found in 1986, partly excavated by archaeologists in 1986 and 2004	14	Ua-18930 (bone)	1080	45	AD 896–1020
				St-10785 (hearth)	1110	110	

Table 5. Bear spears in Swedish museums (Ájtte: Swedish Mountain and Sámi Museum, County Museums of Norrbotten, Västerbotten, and Jämtland, Silvermuseet Arjeplog, Skellefteå Museum). Only objects with known lengths or other interesting data are included. Abbreviations for Swedish administrative units landskap: Gä = Gästrikland, Jä = Jämtland, La = Lapland, Ån = Ångermanland. Inverted commas indicate texts/numbers on the spears themselves.

	Spear total		Spearhead			
Inv. no.	**length (cm)**	**diameter of shaft (mm)**	**length (cm)**	**diameter (mm)**	**shape**	**Parish, notes**
Ajtte, Swedish Mountain and Sámi Museum, Jokkmokk, Lapland						
AJ:003322	*c.* 153				quadrilateral	La, Jukkasjärvi (shaft?)
AJ:003323	*c.* 175				quadrilateral	La, Jukkasjärvi
AJ:003886:1–2	*c.* 186					La, Arvidsjaur
Etn:36.48.1			24.5	16		La, Jukkasjärvi
Jm:001438	194	25	27.5	40	rhomboid	
Jm:001439	192		15.4		rhomboid	Fig. 17a–b
Jm:001544			46.4	35	rhomboid	
Nbm:006002	152	21.5				La, Jokkmokk shaft
Nbm:006004	190	27.5			rhomboid	La, Jokkmokk
Nbm:006005	142	31.5				La, Jokkmokk; notes; shaft: "J.O.A.", head: "OGEB"
Nbm:006006	177.5		28	15	rhomboid	La, Jokkmokk
Nbm:006007	173.5		20.5	13	rhomboid	La, Jokkmokk
Nbm:006008	203		25	14	rhomboid	La, Jokkmokk
Nbm:006009	196		23	16	rhomboid	La, Jokkmokk
Nbm:006010	180.5	32	18.5	14	rhomboid	
Nbm:006011	197	37	19	14		La, Jokkmokk
County Museum of Norrbotten						
Nbm:004908			35	10.7		La, Överluleå
Nbm:008504	179	50	25			La, Gällivare; notes; shaft: "1878, 1889", "NAW"; "NNS"
Nbm:010751	173	32	23		angular	La, Nederluleå, handmade

Cont. Tab. 5. ▼

Cont. Tab. 5.

	Spear total		Spearhead			
Inv. no.	**length (cm)**	**diameter of shaft (mm)**	**length (cm)**	**diameter (mm)**	**shape**	**Parish, notes**
County Museum of Jämtland						
JLM 77S1214 40-41	178					Jä, Frostviken, Sandnäset; notes; shaft "1848", "P I S. S S."; Fig. 17g
JLM 1053			50	42	1+2 edges, knife-shaped	Jä, Sundsjö
JLM 21536			28	35		
Skellefteå Museum						
SM650			20	24	rhomboid, iron	La, Jokkmokk, Murjek, for wolf hunting?
SM651	266	20				La, Jokkmokk; decorated
SM655	208		36.5	35		Vb, Skellefteå
SM656	212	37	41	55		La, Skellefteå; note; "1714", "NIS", "brand"
SM657	213	40	26	23	rhomboid	La, Skellefteå, for wolf
SM3024			47.5	55	rhomboid	La, Skellefteå
SM7724			38	24		La, Arvidsjaur, for wolf
County Museum of Västerbotten						
1429	168.5	36	27?			La, Sorsele
3484			24			La, Karesuando
4076			47	38		La, Sävar, Botsmark
SSM80132	169	35				Jä, Åre, Duved
SSM80216	205	37				Jä, Tåsjö, Brattbäcken; notes; cover: "Sven Wikström Brattsbäcken 1906", head: "NAGL" (SW 1860–1931)
SSM80259	225	60				La, Jokkmokk, Njunjes
SSM80260	260					La, Jokkmokk, Aktse; marks from bear claws
SSM80275	207		29			La, Arvidsjaur/Boden Fig. 17f; decorated; cf. Iregren 2021, fig. 13
SSM80460	>144		14.5			La, Jokkmokk, marks from wolf's teeth
SSM80481	112.5	45	47	48		Finland, Lake Inari; re-shaped into ice axe; Fig. 17h

Cont. Tab. 5. ▼

Cont. Tab. 5.

	Spear total		Spearhead			
Inv. no.	**length (cm)**	**diameter of shaft (mm)**	**length (cm)**	**diameter (mm)**	**shape**	**Parish, notes**
SSM80510	169	35				La, Arvidsjaur, Pjesker
Silvermuseet Arjeplog						
Sma 320	230		30/24			La, Arjeplog
Sma 916			20	20	rhomboid	La, Arjeplog
Sma 2572			20	25		La, Arjeplog
Sma 5167			18	20		La, Arjeplog
Sma 5810			26	32	rhomboid	La, Arjeplog; note; "P. Lahrson Sakkavara 1880" (PL 1830–1913)
Sma 7912			17	20	rhomboid	La, Arvidsjaur, Aggnäs
County Museum of Dalecarlia						
DM 00574			62.5	50		Gä, Torsås, Fagersta
Kulturen i Lund, Scania						
KM13629						Orrarnäsfjäll, Jä, Frostviken, KM13629; decorated; notes; cover: "M. Andersson Orranäsfjäll 22/4 1884", "1887", ferrule "1884"; Mattias Andersson born in 1865. Cf. Iregren 2021, 13–14, for comments on name and decoration

Table 6. Epiphyseal growth of long bones and disc fusion in vertebrae in well-documented Sámi bear graves found in Sweden and at Spildra, Kvænangen (northern Norway). Age estimation after Weinstock *(2009) for Ursus arctos horribilis, the brown bear of North America. - = open epiphysis, ± = epiphysis in fusion with the main element, + = epiphysis fused, px = proximal epiphysis, di = distal epiphysis. Regarding the bear graves at Spildra, all burials have been damaged and further, only part of the remaining bones were investigated due to ethical considerations.*

Site/	**Nåttinäset**		**Karats**		**Gråtanån**		**Nedre Vapstsjön**		**Sörviken**		**Gällholmen**	
Element	px	di	px	di	px	di	px	di	px	di	px	di
Vertebra		-			-		-					
Humerus			-		-	±	-	+	-	+	+	+
Radius		-	+	-	+	-	+	±			+	+
Ulna	-			-	-		+	-	+	-	+	+
Pelvis, acet.												
Femur			-		-	-	-	-	-	±	+	+
Tibia			-		-	-	-	±	-	+	+	+
Fibula				-	-	-	-	+	+	+	+	+
Calcaneus						-		+		+		+
Metapodial		-		-		+		+		+		+
Phalanx I	-		-±+		+		+		+		+	
Phalanx II			-±+		+		+		+			
Age (years)	<2–3		3–4		4–6		6–7		6–7		> 6–9	

Site/	**Spildra A**		**Spildra B**		**Spildra C**	
Element	px	di	px	di	px	di
Vertebra	±/-		-		+	
Humerus	+	+	-	+	+	+
Radius	+	+	+	+		
Ulna		+	+		+	
Pelvis, acet.	+		+			
Femur	+	+	-			
Tibia				-		
Calcaneus	+					
Metapodial		+				
Phalanx I	+					
Age (years)	*c.* 6–8		*c.* 6–8		> 9	

Sámi bear graves in Norway – hidden sites and rituals

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Keywords: Sámi, brown bear, ritual, burial, graves, Sámi drums

Abstract: This paper presents a research project on bear-human relationships, focusing on the Sámi bear grave rituals and burial customs in Norway. The background to this project is a study of 30 bear burial sites, of which several were archaeologically recorded. Based on this information, a typical feature of these sites are burials in natural rock cavities, caves and in screes and under large boulders. In general, these date to between c. *AD 300–1800. This makes the Sámi bear burial custom one of the longest surviving burial customs of any kind known in northern Europe.*

Introduction

The brown bear (*Ursus arctos*) was feared, and at the same time appreciated by and sacred to the Sámi, and it was hunted for several needs and purposes. It was normal for the Sámi to worship and praise the animal, although it could be scary, in order to succeed in hunting and to ensure the bear's return and its rightful place in nature. Sámi is an extremely rich language in terms of concepts for nature, animals, hunting and fishing (Gaski 2020). The way the bear was worshipped and understood is strongly attached to the Sámi term and concept of *lihkku* (happiness and prosperity). This term, *lihkku*, possesses an aesthetic dimension with certain rules and rituals, and success in hunting was an important matter in the old Sámi hunting culture. The recognition and understanding of the term, *lihkku*, are evident and continue in the Sámi society today, especially in the reindeer herding society (in North Sámi), where they call it *boazolihkku* "reindeer happiness" (Sommerseth 2009b, 158). According to the Sámi philosopher, Nils Anders Oskal, reindeer or hunting prosperity lasts from the cradle to the grave but may change over time (Oskal 1995). You can influence your own reindeer or hunting prosperity through actions and thoughts, and to a certain degree you can improve your own happiness, but you can also spoil it. How your *lihkku* develops depends on how you live as a person, not only on how you treat animals.

The traditions and hunting rites around the Sámi bear hunt in Scandinavia are well documented in ethnographical written sources, through stories of the bear hunt and other human-bear relations that are still preserved in living traditions and in place names to this day. This article aims to present the archaeological sites and ethnographical sources of the Sámi bear hunt in parts of northern Norway. In general, brown bear bones are found inside natural caves and beneath large boulders, and the bear grave sites are often located along the coast, on islands and in the fjords. These graves are therefore interpreted as a specific practice that relates to pre-Christian Sámi belief and cultural context (Petersen 1940; Myrstad 1996; Schanche 2000; Dunfjeld-Aagård 2005; Svestad 2018; Sommerseth 2021). The practice around the Sámi bear hunt is often recorded in the older ethnographic and

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 587–602 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134350

written records that describe the hunting traditions and rituals. Evidence is found in some of the missionary accounts from the 17th and 18th centuries, from priests who sought to convert the Sámi to Christianity (Niurenius 1905 [orignally published 1645]; Rheen 1897 [originally published 1671]; Schefferus 1956 [originally published 1673]; Dass 1992 [originally published 1739]; Fjellström 1981 [originally published 1755]; Leem 1975 [originally published 1767]; Friis 1871). Later, throughout the 20th century, living traditions and old stories told by the Sámi themselves were recorded, adding new knowledge of the historical context of the bear cult (Turi 1911; Bjørnson 1916; Edsman 1994; Ryd 2007; Borgos 2013; 2020).

The discovery and dating of bear graves in Norway

A total of 30 bear burial sites are known in Norway. Many graves have been archaeologically recorded where the bones of brown bears, along with traces of ritual burial, were found in specific places in the landscape (Fig. 1; Table 1; cf. Myrstad 1996; Dunfjeld-Aagård 2005; Svestad 2018; Sommerseth 2021). A common feature of the graves is that they are discovered in natural cavities and screes, where the bones have been placed in dry and airy places directly on the surface. Only five out of 30 burials sites appear to have constructed elements, such as stone slab covers and other traces that show that the cave has been rearranged by humans. Only one grave, the Salfjella grave, which is the southernmost bear grave in Norway, was arranged as a burial in the ground covered with stone slabs and gravel. This grave, which is dated to between *c.* AD 1471–1681, also contains the only artefact found in connection to a bear – a brass chain attached to the right cheekbone of the cranium (Petersen 1940, 158; Dunfjeld-Aagård 2005).

The sparse grave material from the northernmost part of Finnmark, such as that from Nesseby, has a similar appearance to the Salfjella grave material. This bear grave was found on the top of a small hillside in a scree area in 1985; it was covered with slabs and gravel and was dated to between *c.* AD 860–1169 (Myrstad 1996). Another important feature of the bear graves is that very few have been found in the high mountains. Only four bear burial sites, mainly located in the south of Nordland County, have been found far away from the coast with no visibility of the sea. Nevertheless, all bear burial sites have some typical attributes in that they have been found in natural caves, under boulders and in screes, which are normal landscape features along the coast of northern Norway (Fig. 2).

Only seven bear graves along the coast are intact, with bear bones, hidden in natural caves in the landscape. One site is situated in the Vesterålen region, four sites are on the island of Spildra, and two more sites are in the western part of Finnmark. These sites are very vulnerable, and they are automatically protected through the Cultural Heritage Act, supervised by the Sámi cultural heritage management. The bear graves on the large island of Spildra in the northern part of Troms County are the only ones that have information signs and posters. These posters are there to inform visitors to take care and not to disturb the unique sites. Three of the bears lying *in situ* at Spildra are dated to between *c.* AD 1030–1285 (Myrstad 1996).

Many bear graves in Norway have been discovered by chance, through the construction of roads and housing or power line routes. Only a few bear graves have been discovered through research and local knowledge. Between 1911 and 1980, most of the bear graves from the coast were incorporated into the collection of the Arctic University Museum. Some of the bear bones from areas that were exploited around the turn of the century are kept in other museum collections, such as the one at the Institute of Basic Medical Sciences, University of Oslo (The Schreiner Collection).

The very first bear grave was found on the island of Senja in 1911, during road works. The bear cranium was discovered inside a small cave that was later destroyed (Fig. 3). A bone sample from this large cranium is dated to the modern period between *c.* AD 1694–1917, the latest definite date that

can be linked to the Sámi hunting tradition and ritual burial. The bear was probably deposited in the cave according to old Sámi burial practice but was most likely hunted down using new hunting methods, such as firearms, which became more common throughout the 18th century (Sommerseth 2009a, 262).

In total, we know of 44 bears from the grave sites, and there is a great variation in the number of bones and teeth that have been preserved and counted. Few sites have finds of bear crania, which are mostly fragmented, and we know of only two sites where almost the entire skeleton has been found – on the island of Spildra and in the Røykenes locality, which have been dated to between *c.* AD 1645–1800 (Fig. 4). For most of the sites, we have only a few intact skeletal parts documented, which seems to be normal for such finds. This situation can reflect the conservation conditions at the site, and bones may also have been carried away by other animals and later damaged by natural decomposition. Another factor that may have played a role could be the circumstances around the discovery. Information from the museum's archives indicates that bear crania and bones had often been stored for a long time locally in the village before they were collected and sent to the museum. In this way, the information on the site and the conditions around the discovery were missing, and further archaeological investigation became impossible. From the 44 known bear individuals, there are 28 bear crania kept in the museum's collection; only a few are intact while most are fragmented.

In eight of the 30 bear burial sites, more than one bear has been documented, and at two of these sites we have solid documentation of bear cubs (Myrstad 1996, 97–100; Sommerseth 2021). One of the cubs was found on the island of Ringvassøya in the northern regions of Troms County, during road works in 1985. The site has now been destroyed, but a new study of the bone material revealed a bear cub in addition to an adult bear. The adult one is probably a female, and a bone sample from its humerus is dated to between *c.* AD 1027–1153 (Sommerseth 2021).

Seines, a spectacular bear grave site with eight bears, one of them a cub, was found on an islet near the town of Narvik in Nordland County in 1970. Five bone samples from different jawbones have been dated to between *c.* AD 1052–1424 (cf. Table 1: Seines), which indicates that the Seines locality was used intensively over a specific period. For several years, many bones were collected from a more or less ruined site, but the central location and appearance is similar to nearby bear graves in the region, indicating that the place must have been most suitable for ritual bear burials. In addition to the many bears, bone fragments from reindeer, cows, and sheep were also documented (Myrstad 1996, 98). This indicates that the grave might also be interpreted as an offering site, with other purposes than that of a bear grave (see Spangen et al., this volume).

This assumption, though, needs a larger empirical basis through an archaeological investigation. Still, burials and sacrifices can be complementary and may have been performed in the same favourable place in the same period, similar to the bear graves on the island of Spildra further north.

One of the goals of the project was to initiate new datings of some of the material, since the first radiocarbon datings were performed more than 25 years ago. The aim was to test older data and compare them to new ones, to see if the sites' timelines match with more accuracy. A total of 22 bears in Norway have been radiocarbon dated, and the results are surprising, as the new datings indicate a burial practice that was in use over a long period of time, *c.* AD 236–1917. The oldest Sámi bear grave found in Scandinavia is from a cave on the island of Tjeldøya in Nordland County. The site was discovered in 1961 and is unavailable due to its location by steep mountains and large boulders. The find consists of 11 bone fragments, including jawbones from a small cranium, which indicates that it was a young animal. A bone sample from a femur yielded a date between *c.* AD 236–385.

A newly discovered bear grave site was investigated on the island of Hovøya in 2005, in the southern part of Nordland County, which yielded a bear cranium with a sensationally old dating (Dunfjeld-Aagård 2005). The remains of two bears were found, one of which consisted of a large bear cranium that was already linked to a local story from more recent times. It is said that the bear died

in a forest fire, and the roar could be heard by everyone in the village. A dating from the other bear turned out to be much older; it is the only one that goes back to the Stone Age. The bone yielded a date between *c.* 1294–1021 BC (Dunfjeld-Aagård 2005, 96). The bear bones were collected by locals, and the provenance is therefore uncertain, as is the assumption that this bear corresponds to the emergence of Sámi burial customs (Svestad 2018, 22).

Most bear graves in Norway date to the Late Viking Age and medieval period between AD 900–1400. The radiocarbon datings from this period are from 12 bears that were geographically located along the coast from Nesseby in Finnmark County in the north to the south of Nordland County. The large concentration related to the medieval period may indicate that bear hunting was at its most intensive and had great relevance for the Sámi both in the north and in the south. The bear hunt was probably a specialised Sámi hunting tradition along the coast, and it was also well-established and accepted among non-Sámi communities (Svestad 2018). There were probably few restrictions or taboos associated with the ritual aspects and participation in the bear hunt, even though missionary work was in progress in this period. The ritual burial practice and regional traditions must have taken place uninterrupted until well into the 16th century.

Throughout that century, we find a marked decrease in the number of dated Sámi bear graves, and this observation corresponds with the historical emergence of the intensive missionary work aimed at the Sámi people (Hansen/Olsen 2014). A small group consisting of seven bear grave sites is dated to between *c.* AD 1500 to the 1800s, which marks the end of the ritual bear grave tradition. The majority of the latest bear grave sites have been found in the Vesterålen and Lofoten regions in Nordland County, except for one that was found in Salfjella in Trøndelag County. Through the radiocarbon dating of the bear bones in context with the localities, we have been able to document a feature that is unique to Sámi history; the longest surviving burial customs of any kind known in northern Europe, from the Iron Age until the 20th century.

The bear in relation to Sámi cosmology and rituals

It is very likely that the presence of the bear and the act of hunting it were of great importance to Arctic people in prehistoric times, as can be seen in the many hundreds of bear motifs at rock art sites in northern Scandinavia, dating from the period between 10,000–1700 BC (Fig. 5; cf. Helskog 2014). The bear has also been treated with respect by other societies such as the Finns and the northern peoples further east on the Eurasian continent and in the circumpolar region (Edsman 1994). In Norway and Sweden, there are historical written sources that provide good descriptions of the Sámi bear hunt and the various rituals around the burials (see Rydving, this volume). These sources were recorded by missionaries and priests who sought to convert the Sámi to Christianity. The accounts have later been the subject of thorough studies and critical interpretations, especially in the matter of the subjectivity of the compilers who attempted to convert the Sámi (Hultkrantz 1985).

The review of the material and the new dating results suggest that the regional customs around the bear hunt probably varied, as well as the custom of creating the graves and handling the bones. There are very few bear graves in Norway and Sweden that contain all the bones intact or have bones arranged in the correct anatomical order, such as the Gällholmen bear grave in Sweden, displayed at the Länsmuseum in Umeå (Zachrisson/Iregren 1974; see Iregren, this volume). Most of the graves, especially in Norway, have been documented with small amounts of bones and only fragments from the crania. The scarcity of bones and other finds such as birch bark that, according to the sources, were used to wrap the bones, can be explained by natural decomposition processes on the exposed sites. There are reasons to suspect that crania and bones have disappeared from bear graves over time. In some cases, we learned from reliable sources that crania have been removed or stolen from the sites

and later returned, as is known for the Ånestein and the Juvika bear sites in the Vesterålen area. The graves also vary slightly in terms of appearance and choice of caves, boulders, and screes. The differences can only be understood as local adaptations within an overall cultic burial tradition.

Most of the written sources and interpretations emphasise that the act of handling bones relates to perceptions of the deceased's skeleton, which was considered crucial for a new bodily existence in the afterlife (Fjellström 1981; Edsman 1994; Schanche 2000; Svestad 2018). The importance of handling the bones correctly probably had a great relevance to the entire community in ensuring its good reputation, as well as to the individual hunter who could personally ensure further prosperity (*lihkku*) in hunting and in life itself. Some old accounts are explicit that the bones should not be broken or damaged, and that they should be buried according to certain rules (Dass 1992; Fjellström 1981). The old sources partly correspond with the bones in the museum collection. A new review has adjusted the number of bones that show signs of splitting and marrow extraction. Out of 30 bear sites in Norway, there are only 11 sites that have bear bones with signs of cutmarks.

According to Sámi burial customs, the natural cavities used as a burial places for the bears were intended to function as open passages to the various worlds that were inhabited by gods and spirits. All cavities and openings under large boulders could be suitable places for transformations and travels between the different worlds (Fig. 6; cf. Myrstad 1996, 66–67). This connects with the bear's natural hibernation, one of many reasons why the bear was considered an animal with secretive powers. The bear is an animal that disappears in the winter and comes back after hibernation when spring arrives, and the chosen burial sites for bears have great similarities with bear dens, as if the hunters wanted to bring the bear back to the place where it was born (Svestad 2018, 26). The slight differences of interpretations do not have to be in opposition to each other but can provide for extended descriptions of criteria for why the hunters chose the bear burial sites.

The bear in relation to the Sámi gods

The bear is often depicted on the *goavddis* (in North Sámi), the sacred Sámi drum, and often in relation to the other gods and animals displayed on the drum skin. As part of the hunting preparations and other important social events or personal matters, the drum was used to invoke the goodwill of the gods. It was very important to seek advice from the gods with the help of the drum before the bear hunt (Schefferus 1956, 255). The figures painted on the Sámi drums represent a microcosm of the Sámi universe, and all the old drums in Sápmi (the cultural region inhabited by the Sámi) vary greatly in design and choice of motifs. Most of the Sámi drums were interpreted by the missionaries, so the accuracy of their interpretation must always be looked upon with a critical approach. What is interesting to notice is that the bear is often portrayed on the drums, probably reflecting the intimate and complex relationship between bears and people in Sámi pre-Christian society and cosmology (Svestad 2018, 27).

Some of the gods and animal figures on all the old drums have common features that are known, while other figures are distinct for the region in which the drum was used (Storm/Fonneland 2022). Nevertheless, there are several indications that the bear and the Sámi god *Leibolmai* (in North Sámi) belong to the same cosmological level, because *Leibolmai* is the leading hunting god and considered the bear's protector and leader (Friis 1871, 40). According to a Norwegian missionary, Johan Randulf, who lived in Nordland County in the period 1718–1727, it was explained to him by the Sámi that the bear was also considered the *Guds hund* (Gods' dog; Qvigstad 1904, 27). In the same transcript of the Nærøy manuscript by Randulf, he further states that good hunting fortune (*lihkku*) depended on a good sacrifice to the god, *Leibolmai*, so prestigious objects such as the bow and arrow were sacrificed. It was especially important to get *Leibolmai's* permission for a successful hunt so

that you were not killed by the bear yourself (Schefferus 1956, 255). This is supported by the fact that on one of the Sámi drums we can see the bear walking towards its protector and leader, the god *Leibolmai*, both on their way to the sacred mountain (Fig. 7; cf. Friis 1871, 40).

The bear hears and understands everything!

In recent written and oral sources from the Sámi themselves, the bear is still a noble animal who enjoys respect, but this is not totally unconditional (Turi 1911; Edsman 1994; Ryd 2007). The bear was considered to be big and strong, but not too smart and not cunning at all (see Grimm et al., on Bears – fact or fiction, this volume). In several of Qvigstad's (1928, 1–28) notes on old Sámi legends and stories from Troms and Finnmark County, it is emphasised how the fox always fooled the bear, even though the bear was the stronger of them both. According to ancient myths, the partnership and cooperation between humans and bears was about equality and respect for each other (Turi 1911). Similar stories are found in 18th-century sources, where the consideration for the bear and its place alongside humans is reflected in the language, the hunting traditions, the ceremonies, and in burial rituals.

Sámi is a rich language in terms of its concepts for nature, animals, hunting and fishing. As Gaski (2020, 14) explains: "There are several hundred distinct terms for different aspects of snow and ice, and a similar abundance of terms for different aspects of reindeer, including the animal's appearance, age, sex, and color of fur. In the past, Sámi also employed many metaphorical terms for predators like bears and wolves, because these were regarded as so intelligent that they could understand ordinary human language".

The real name of the bear in the Sámi language is *guovža* (North Sámi), and *duvrie* (South Sámi). These names are rarely used, because the bear can hear its name and could thus be unintentionally summoned (Fjellström 1981). The bear has therefore been given metaphorical names, to avoid the animal overhearing the humans' plans for hunting or trapping. Using the bear's proper name would alert the bear to a hunter's intentions, while employing a metaphor, calling the bear by one of its physical attributes or by using kinship terms, would help the hunter or the community to plan the hunt in secret (Qvigstad 1904; Gaski 2020, 14).

The Sámi names and metaphors used for naming the bear are rich and have been used differently from one region to another. Stories and attributes around the names are linked to nature or to kinship among people, for example, *áddja* (grandfather), *áhkku* (grandmother), *dárffot* (turf-like), *muodda* (the old fur), *basse-váise* (the holy, wise animal) *ruomse-gállis* (old moss man), *suohkat* (thick-fur man) (Friis 1871; Rheen 1897; Fjellström 1981).

Many of the names describe the bear as a good-natured and pleasant animal, and some names refer to an old relative, despite its fearsome strength. Most of the metaphorical names are known from 18th-century sources, and the names have at least two purposes – first and foremost, to mask the hunter's real intentions and to keep the hunter's plan secret from the bear, and second, to include and relate to the bear as vital to the society. This was perhaps especially important to appease the gods, and especially the hunting god, *Leibolmai*, who was the keeper of the bear and who, on the one hand, protects the bear, but on the other allows the Sámi to hunt it and decides the hunter's success (Mebius 1968, 128; Leem 1975, 413).

In every fjord and mountain area in northern Norway, it is normal to find bear-related place names in the landscape, most of them are mapped in the Norwegian language, but some bear names have survived in the Sámi language. Sámi place names in general are known for their mapping of the cultural landscape, and they are used as a topographic tool built around narratives related to specific landscape features and landmarks (Mathisen 1997, 120–133). The Norwegian bear names on the map often refer to local stories around the hunt or to rich hunting areas or places where the bear was

seen, such as *Bjørnskaret*, *Bjørnsletta*, *Bjørnsund*, *Bjørnlikollen*, and *Bjørnknorran*. The Norwegian name, *Bjørnhellarbukta*, which means "the bear-boulder in the bay", corresponds directly to a bear grave site in Nevelsfjord, which is dated to between *c.* AD 1030–1274. This name has probably been translated from an old Sámi place name, but due to changes around the bear hunt and the consequences of Norwegianisation during the 19th and 20th centuries, the Sámi name was lost. Only some Sámi place names in northern Norway can be related to the bear and in some cases to the landscape where we have documented old bear grave sites. These places often include local knowledge and stories, such as the *Guovžabákti* (the small bear hill) in Nesseby in Finnmark, located one kilometer from a bear grave site that is dated to between *c.* AD 860–1169. It is difficult to search for new bear grave sites based on modern maps with Norwegian place names, so it is therefore crucial to study old Sámi place names along with landscape features and landmarks to understand the cultural landscape.

Traces of the Sámi bear cult in the 18th and 19th centuries

In the area between Nordland and Troms County, a cluster of 15 bear graves with a total of 19 bears have been documented. Some of the graves have been left intact in the landscape; the finds from the other graves are kept in museum collections and described in written sources. The large cluster of bear graves in this particular area is quite special and makes up 45 % of all bear grave sites found in Norway. The question is, why are there so many bear graves in this area? Was the population of brown bears larger here than elsewhere in historical times? Have the hunting traditions and burial customs remained intact over time in this area? Or have the cavities with burials been well hidden and later forgotten until today? Not all of the questions can be answered, but we can try to interpret the sites' presence and time of use.

The region of Vesterålen stretches from the outer coast fjords to the inland coastal areas. The graves are present from Tysfjord to the large islands of Hinnøya and Senja, an area between Nordland and Troms County. This region is also represented by some of the latest ^{14}C-dated burial sites, suggesting that the cultic and ritual traditions lasted longer here than elsewhere in Sápmi and long after the Sámi were Christianised. The time span between the earliest and latest site in this region is substantial, and the oldest bear grave in Tjeldøya, as mentioned earlier, dates to between *c.* AD 236–385 and, close by in the same area, is the Djupfest site, which is dated to between *c.* AD 1442–1690. The distance between these two burial sites is only five kilometers and they are situated in the same type of landscape; they have the same appearance and the physical remains of ritual burial practices. From oral and written sources, we know that ritual bear burials were practiced in this region until the beginning of the 19th century (Bjørnson 1916).

This area is a geographically limited one, as mentioned above, where we find some of the latest ^{14}C-dated bear graves in Norway. Statistics on the number of bears hunted in Norway in 1850 show that 60 brown bears were hunted down, with an estimated population of 3,000 individuals (www.skandobs.no). This suggests that there was a large population of bears in the 19th century. The brown bear must have been very numerous even before the 1800s, as it is mentioned in much older sources. In the 16th century, it appears from the missionary sources of the priest Peder Claussøn Friis (1545–1614) that there were many bears ravaging small fishing villages in the Vesterålen and Lofoten regions (Storm 1881, 375). The authorities saw it as necessary to organise a municipal bear hunt, which was paid for and carried out by skilled hunters. It does not tell us who the hunters were, but recent research has revealed the historical presence of several Sámi fishing villages in the Lofoten and Vestårelen areas (Borgos 2020).

One of the stories that is known to local people concerns a famous Sámi bear hunter named Åne Ånesen (1745–1811), who is said to have killed over a hundred bears as an authorised hunter (Borgos

2020). Throughout the 18th century, it was common in many coastal areas to have a scheme for "bear tax", where the Sámi hunters could be paid by the local farmers for their services. It is said that the payment took place when the bear hunter rowed with his boat from farm to farm with the felled bear visible in his boat. This was to show that the bear hunter was skilled and trained and ready for his reward and new assignments.

To complete the story of the bear hunter from Vesterålen, a large boulder named Ånesteinen, after the same famous hunter, Åne Ånesen, is documented (Fig. 8; cf. Borgos 2013). Today, this large boulder has many local stories and myths associated with it and its location, and the bear hunter's name is a topographic tool used to keep the narratives alive in the local community. The boulder itself and the site represent also a very strong and visual landmark. Best of all, there is a bear grave under the boulder, registered around 1979, but unfortunately many of the bear bones have been disturbed and moved inside the cave. The bear bones were therefore examined and documented by The Arctic University Museum of Norway, and they originate from one bear, from which three different bones were dated as belonging to the period between *c.* AD 1726–1815 (Sommerseth 2021). The historical sources about the bear hunter Åne and the places where he lived represent actual events. He lived in the Vesterålen region with his family at the end of the 1700s, and one story is about the bear that injured Åne's face with its claws, just before he managed to kill the bear. It is said that he carried the scars on his face with pride and great honour (Borgos 2013).

Final remarks

During the course of the 19th century, the traditional knowledge around the Sámi bear cult and the bear graves disappeared (Myrstad 1996; Schanche 2000). The ritual traditions changed to practical explanations, and bear bones found under boulders and in screes around local communities could not be explained, so alternative stories arose. Some stories about the bones are explained by and connected to strangers that have perished, or robbers who have starved to death, or bears that have died in forest fires. This was easily done because some of the bones from the brown bear are very similar to those of humans and are easily misinterpreted by non-professionals. Other stories are, for example, that the bear was buried as a food store for use in bad times. Such stories are many, especially along the coast of northern Norway. The loss of knowledge, memories and traditions around the Sámi bear hunt and grave rituals is also a consequence of Norwegianisation during the 19th and 20th centuries (Sommerseth 2021; cf. Svestad 2018).

The bear bones from Ånesteinen in the region of Vesterålen, which are dated to the end of the 18th century, were probably buried there in line with the old Sámi burial customs, to honour and respect the bear and to renew good hunting fortune (*lihkku*), despite the intense missionary work and Norwegianisation by the church and the authorities. The bear grave at Vesterålen does not stand out from the rest of the material, and this 18th-century grave represents the same ritual practices regarding localisation in the landscape, treatment of bones, and burial practices as those at the much older Iron Age and medieval sites. Burials in natural cavities demonstrate that landscape affordances had a vital impact on the religious concepts and burial practices in Sápmi, the longest surviving burial customs of any kind known in northern Europe. It is said that when Åne the famous hunter was about to die, he heard a bear scratching on the wall outside his home and said: "Now, let it be" (Borgos 2013). Today, Ånesteinen is a popular hiking destination with spectacular views, and the locals are still telling the story about Åne the hunter. This is a reminder that the bear bones in general and bear graves in particular are still visible narratives in the northern landscape. They have an important role for us all and are a strong reminder of ancient stories that are still alive in Sámi history.

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Fig. 1. Location of the Sámi bear graves mentioned in the text, including a picture of the coastal bear grave site in Nevelsfjord (graphics I. Sommerseth, The Arctic University Museum, UIT).



Fig. 2. A bear grave site in the southern end of the Lofoten archipelago, Moskenes Island. The grave is in the scree area along the shoreline (photo I. Sommerseth, The Arctic University Museum, UIT).



Fig. 3. Bear cranium found in a small cave near the village of Lekangen on the island of Senja in 1911 (photo G. E. Lien, The Arctic University Museum, UIT).



Fig. 4. Bear cranium found at the Røykenes farm in Troms County, belonging to a complete skeleton, dated to between c. *AD 1645–1800 (photo I. Sommerseth, The Arctic University Museum, UIT).*



Fig. 5. A 6000-year-old hunting scene – a wounded bear and the hunter with his spear. Motif from the panels at the World Heritage Rock Art Centre at Alta, Alta Museum in Troms and Finnmark County (photo K. Helskog, The Arctic University Museum, UIT).



Fig. 6. A typical bear grave site in the Vesterålen area. The bear bones are still in situ *inside the boulder, the site is kept secret (photo I. Sommerseth, The Arctic University Museum, UIT).*

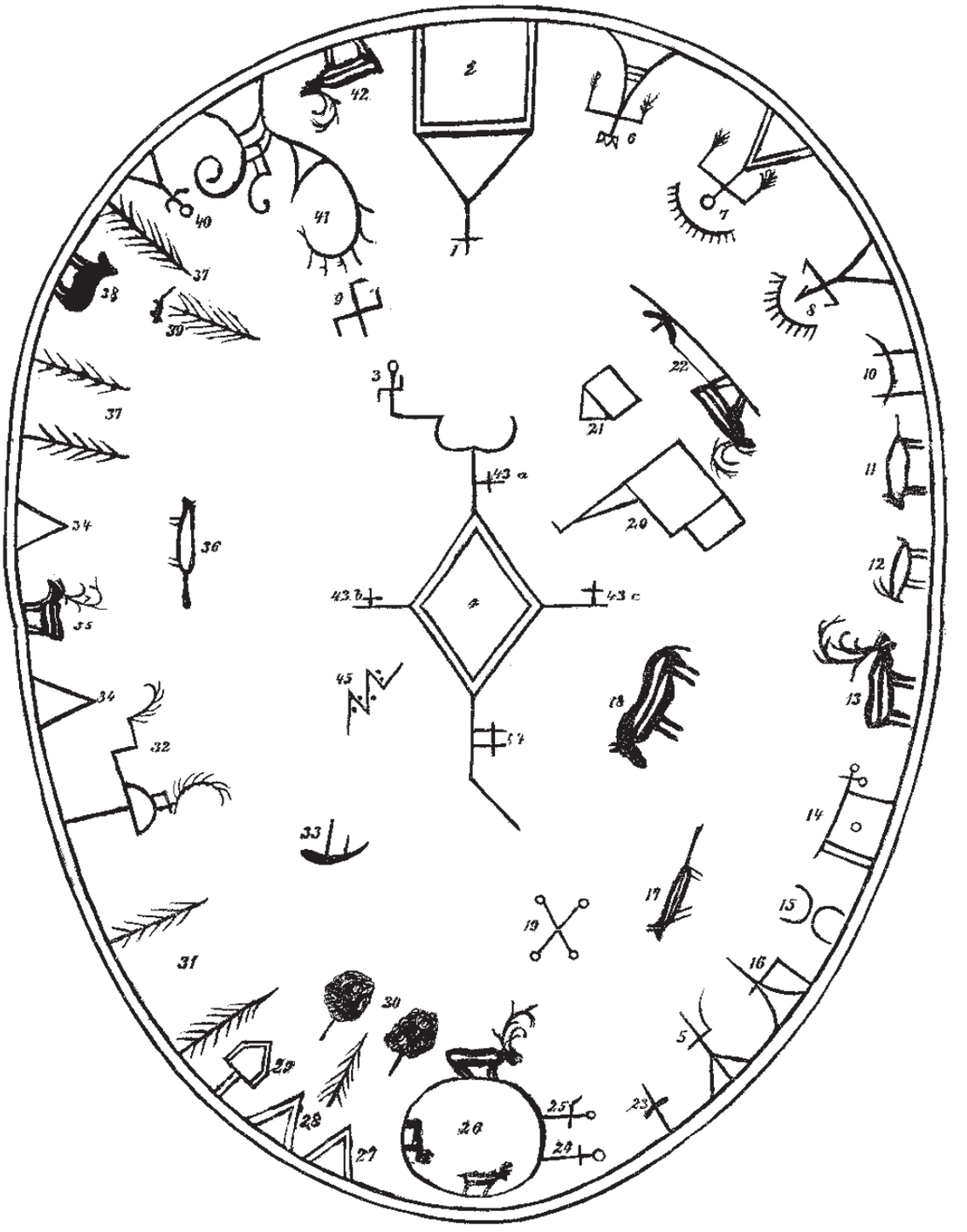


*Fig. 7. A Sámi drum (*goavddis*), documented and interpreted by the missionary Knut Leem in 1767. According to him, the bear (no. 38) is walking to the thick spruce forest (no. 37) and to his keeper, the god Leibolmai (no. 40), both near the sacred sacrificial mountain (no. 41; graphics E. Kjellman, The Arctic University Museum, UIT).*



Fig. 8. The famous bear grave site "Ånesteinen" in Vesterålen (photo I. Sommerseth, The Arctic University Museum, UIT).

Table 1. Bear graves in Norway (n = 22) that have been radiocarbon dated.

Locality	County	Year of dating	Lab. no. (result BP)	OxCal v4.4.2 (2020) cal. 95.4 %
Hovøya	Nordland	2005	TUa-5026 (2960±45)	1294–1021 BC
Tjeldøya	Nordland	2019	Beta-538923 (1740±30)	AD 236–385
Bunkholmen	Troms	1996	T-12020 (1330±75)	AD 583–881
Nesseby	Finnmark	1996	T-12025 (1030±75)	AD 860–1169
Ringvassøya	Troms	2020	Tra-15653 (970±15)	AD 1027–1153
Skagedalen I, Spildra	Troms	1994	T-11214 (910±60)	AD 1030–1220
Nevelsfjord	Nordland	1996	T-12022 (855±75)	AD 1030–1274
Seines 5	Nordland	2020	Tra-15650 (890±15)	AD 1052–1215
Seines 1	Nordland	1996	T-12021 (755±90)	AD 1120–1399
Skagevågen II, Spildra	Troms	1994	T-11215 (750±70)	AD 1132–1328
Seines 4	Nordland	2020	Tra-15649 (850±15)	AD 1164–1225
Fjellnes, Spildra	Troms	1994	T-11213 (815±70)	AD 1170–1285
Seines 2	Nordland	2019	Beta-538924 (560±30)	AD 1310–1425
Seines 3	Nordland	2020	Tra-15648 (550±15)	AD 1327–1424
Rørmark	Nordland	2005	TUa-4991 (530±45)	AD 1385–1447
Djupfest	Nordland	1996	T-12024 (290±75)	AD 1442–1690
Salfjella	Trøndelag	2005	TUa-5051 (270± 50)	AD 1471–1681
Skrolsvik	Troms	1996	T-12026 (245±55)	AD 1478–1814
Juvika	Troms	2019	Beta-538922 (320±30)	AD 1482–1646
Røykenes	Troms	2020	Tra-15652 (970±15)	AD 1645–1800
Lekangen	Troms	2020	Tra-15651 (100±15)	AD 1694–1917
Ånesteinen	Troms	2016	Beta-450244 (180±30)	AD 1726–1815

Bear bones at Saami offering sites

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Keywords: Saami, bear offering, Fennoscandia, ritual, territoriality

Abstract: Saami traditions related to bear hunting and bear burials are quite well known, both from written and archaeological sources. However, the Saami also included bears in their repeated rituals at offering sites, which has been less explored. In this article, we present the archaeological sources for this offering tradition. Further, we discuss the chronology and geography as well as the content and context of such archaeological finds. As with bear burials, the deposition of bear bones at offering sites has not been a uniform tradition in all Saami communities, which gives an interesting insight into how rituals can both bind a community together and create boundaries with other groups.

Introduction

There are hundreds of recorded Saami offering sites in Sápmi, the Saami areas of Fennoscandia and northwest Russia. The sites have been identified through oral traditions, ethnographic and historical sources, place names and archaeological surveys, and they testify to a cohesive Saami ritual tradition and animistic world view (Helander-Renvall 2010). The sites are usually related to natural features such as cliff formations, boulders or peculiar rocks, but, in the past, offering sites could also be related to trees, rivers and lakes or "altars" built of wood with roughly shaped wooden idols (Jessen-Schardebøll 1767; Friis 1871; Olsen 1910; Qvigstad 1926; Hallström 1932; Manker 1957). Contemporary reports on 17th and 18th century Saami offering traditions describe offerings of mostly reindeer but also birds, fish, wild animals such as bears, and domesticated animals such as cows, sheep, goats, roosters, cats, and dogs (Mebius 1968). However, it is crucial to acknowledge that these sources are time-specific, that the information they convey is drawn from particular regions, even if the sources do not always specify this, and that the authors (usually Christian priests and missionaries) mix local knowledge with generalised accounts from other authors (Rydving 1995). Before the 17th century, there are few written sources with reliable descriptions of the culture and social life of Saami groups; thus we have relatively little knowledge about changes in the offering traditions over time. It is therefore interesting to see that the written sources we have do not always coincide with the archaeological material available (Manker 1957, 40–45).

Very few known offering sites have been investigated through archaeological excavations, but we have information about observed and collected offering matter from quite a few. A series of recent studies of previously collected animal bones from offering sites in Sweden and Finland have discussed species variation and chronology and suggest that the earliest offerings were of wild animals such as bear and swan, with radiocarbon dates of bear bones from the famous offering site of Unna Saiva in northern Sweden (Fig. 1) stretching back to the 6th century AD. Only in the late 12th century do the

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 603–618 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134351

first reindeer bones occur (Salmi et al. 2015; 2018). It is difficult to deduce whether these were bones from wild or domesticated reindeer. However, there is a marked increase in the amount of reindeer bones at the offering sites between the 15th and 17th centuries. This coincides with the first confirmed offerings of reindeer belonging to the genetic lineages of present-day domesticated reindeer, which may indicate an increased economic, and thus cultural, importance of this animal, related to more extensive domestication (Salmi et al. 2018; Heino et al. 2021). In the same time period, ovicaprid bones were introduced at the offering sites, supporting the notion that domesticated animals became more important in the Saami economy. In the 17th century, the offering of animals was drastically reduced, probably because of the intensified Christianisation and severe punishments for maintaining pre-Christian rituals of this sort (Salmi et al. 2015; 2018). The deposition of shed reindeer antlers, foodstuff, and minor objects such as antler spoons and jewellery at known Saami offering sites has continued throughout the centuries up until today. In some places, this has also included the occasional deposition of animal parts, particularly of reindeer (Qvigstad 1926; Mebius 1972; Äikäs/Salmi 2013; Äikäs/Spangen 2016; Spangen/Äikäs 2020). Generally, one may say that the offering matter found at Saami offering sites more or less consciously represents what was available and was of economic and cultural importance at any given time and place.

In large parts of the Saami area, bear hunting has been of importance until modern times for cultural and economic reasons and to decimate the population of this feared and respected animal. Intricate rituals related to the hunt are described in several sources, as are the deposition of the bear bones in "bear graves" after eating the meat (e.g. Petersen 1940, 159; Fjellström 1981). There is less mention in known historical or ethnographic sources of bears being deposited at specific offering sites (see Paulaharju 1941, 7). Nevertheless, the archaeological material tells a different story.

Finds of bear bones in Saami landscapes may of course sometimes be from bears that have died of natural causes, but finds of bears that have clearly been slaughtered and eaten, for instance assemblages of gathered bear bones, often with some elements missing, are usually suggested to be bear graves (see Sommerseth; Iregren, this volume). However, the distinction between such individual depositions and offerings is not straightforward, since the sources we have for the bear hunting rituals and burials are time- and place-specific and may not cover all the alternative practices that were acted out in the past (Myrstad 1996, 4). Even if offerings were often placed on the ground surface, on or near a focal point of the offering site, such as a rock formation, offerings of animals could also be buried in the ground (Mebius 1968, 19). Furthermore, the division between bear burials and bear offerings may have been entirely irrelevant to the Saami groups performing ritual depositions in the past. One example of the difficulty of defining finds as one or the other is a bear skull that was discovered tucked away, but not buried, under a large rock near Mjösjö village in Junsele parish, Ångermanland, Sweden. Since no postcranial bones were collected, it has been suggested that this possibly represents an offering rather than a burial (Zachrisson/Iregren 1974, 34, 96). The case demonstrates how finds of bear skeletal remains within Saami contexts will have to be evaluated on a case-to-case basis.

The same is true when considering so-called bone deposits. In one case, informants in the South Saami area describe that they have observed bear bones placed on platforms in trees. This is explained as an alternative to the traditional hiding of reindeer and bear bones in the ground or under rocks, a feature called *daktsie*, i.e. "bone deposits". The informants' interpretation was that, in this instance, placing the bones in a tree was a more practical solution in winter because of the snow (Petterson 1946, 148, cited in Manker 1957, 268).[1] This suggests that, at least in some times and places, the deposition of bear bones was conceptualised in a similar way as *daktsie* depositions of reindeer

1 The site in question is Trettondagsberget (Idvatnet) in the Saami village/area of South Vilhelmina, Sweden; Manker 1957, cat. no. 453.

bones. It has been debated whether the deposition of reindeer bones is to be considered as a kind of offering practice, or whether it had more practical reasons, in terms of disposing of meal remains and keeping dogs from eating sharp pieces of marrow-split bones. Recent studies conclude that practical and ritual intentions are difficult to separate based on the archaeological material, as these are not separate spheres but tend to be interwoven within Saami culture. A ritual aspect of this practice is probably also time- and place-specific (e.g. Rydving/Kristoffersen 1993; Andersen 2009; Ljungdahl 2012). Burials of entire individual reindeer, which occur both in South Saami areas in Sweden (Zachrisson 1985, 84–86), and possibly in the scree burial field in Mortensnes, northern Norway (Schanche 2000, 297), should probably be interpreted as more certain ritual depositions. The same ambivalence may of course be discussed concerning the described practice of depositing bear bones, and thus even the tradition of bear burials. When placed by an offering site, the religious connotations of a deposition are more obvious.

In this article, and as an operational category, we will define "bear offerings" as bear bones found on sites that are known from other sources to be offering sites, finds of bear bones from more than one individual gathered at a defined site, or bear bones found together with bones from other animals in contexts that indicate repeated ritual depositions at a site. Thus, we exclude most bear graves and other bone deposits, whether or not these have been religiously motivated or are related to rituals.

Geography and chronology

In the present study, we have looked at the reported and collected archaeological materials from offering sites that include bear bones. The investigation results suggest a regional variation that is quite interesting considering the ubiquitous bear and its importance in Saami culture. There is no doubt that traces of bears at offering places are most frequently found in the inland areas of today's northern Sweden (Fig. 2). Ethnographer Ernst Manker reports on the finds of bear bones at 15 of the Swedish locations listed in his seminal work on Saami offering sites, though only 13 are actually counted in the overview table (Table 1; cf. Manker 1957, 45 and table 3).[2] For one additional offering site, at Akkavare, there is recorded information about the observations of bear bones (ibid., 165).[3] In comparison, the neighbouring areas in today's Finland have only one example of bear bones at an offering site at Näkkälä, Enontekiö (Äikäs 2015, 294), apart from uncertain information about one previously recorded find on the island of Äijihsuálui (Ukonsaari) in lake Inari (Okkonen 2007, 30). In today's Norway the examples are also very few, and the ones we include here have previously been defined as bear burials. One is a find of bones and a bear cranium in a cave near a large boulder traditionally said to be an offering site on the island of Årøya in the Alta fjord, Finnmark county (Qvigstad 1926, 340; Myrstad 1996, 31). Another accidental find was made in 1970 on the headland in Seines in the Herjangsfjorden, Nordland county. This was an assemblage of bear bones, especially cranial bones, and teeth from eight bears. These were found together with cow, sheep/goat and reindeer teeth near a conspicuous rock formation, suggesting that this was an offering site. The rock is called "Dead Man's

2 There seem to be some inconsistencies in the information given by Manker concerning offering sites with bear bones. In his table 3, he notes finds of bear bones in the Saami village/area of Jåkkåkaska, but going through his descriptions of the offering sites in this area, we have not been able to deduce what site he means. He also mentions five sites with bear and bird bones: Vieksa, Paddustieva, Haltenjarka, Vierronjarka, and Abelvattnet (Manker 1957, 45 cat. nos. 28, 89, 110, 137, 429). However, bear bones have neither been recorded in the further description of these sites nor in the osteological study performed on the material he discusses (Gejvall 1956).

3 Other finds of singular bear skeletons in Auttejaure, Vesken and Gammgårdshobben in Vapsten, and Värkaren in Frostviken, all in Sweden, are called bear graves by Manker 1957 (cat. nos. 427, 434, 435, 482), and are also defined as such by us.

Rock", because bones were found by the rock. It is not unusual for bear bones to be confused with human bones, and most likely the myth related to the rock was based on this confusion (Myrstad 1996, 9, 38–39). Very little is known about Saami offerings in Russia, and to our knowledge there are no accounts about offerings of bears here, even if we know about burial rituals related to the hunting and slaughter of bears (see below). In Table 1, we have included offering sites from which bear bones are either preserved or where the information about finds of bear bones is specific enough to validate this (Table 1).

Contrary to the geographical concentration of bear offerings in one area, there are records in most Saami areas, from Østerdalen in southern Norway to the Kola peninsula in Russia, of rituals related to the bear hunt and the burial of the bear bones after slaughtering and skinning. Sources describe burials of the bear skeleton in its anatomically correct order (Randulf 1723; Hallström 1922; Petersen 1940, 159; Kildal 1945; Leem 1975), but archaeological investigations have shown that the mode of deposition varied significantly. In some contexts, less attention was paid to anatomical order, and different amounts of individuals, body parts, and other objects and animals are included in the burials (Zachrisson/Iregren 1974; Myrstad 1996; Sommerseth 2021). As noted, it may be discussed whether or not these should be redefined as offerings. An ethnographic example, from Bjälaja guba, Imandra, on the Kola peninsula, shows a specific variation for this region; archaeologist and ethnographer Gustaf Hallström reports in the early 20th century that the Saami here had rituals related to bear hunting, but they never ate the meat. They only preserved the skin, claws, and teeth, while the rest was buried. If it was not possible to bury everything, they cut off the head with the neck and chest and buried that, sometimes marking the place with a stick (Hallström 1922, 176). In both Norway and Sweden, there are accounts that testify to the continued ritual burial of bear bones at least into the 19th century (Zachrisson/Iregren 1974, 13; Myrstad 1996, 20).

The variation in bear rituals such as burials and offerings might potentially be due to chronological variation. Contemporary written sources that describe bear graves range from the 17th to the 20th centuries. In the archaeological material, however, the earliest radiocarbon-dated bear grave is located in Kjærfjorden on the island of Tjeldøya in Tjeldsund, Nordland, Norway, and has been radiocarbon-dated to AD 235–385 (Beta-538923, Sommerseth 2021, 15), while another on Bunkholmen in Lyngen, Troms, Norway, dates to AD 583–881 (T-12020, Myrstad 1996; new 2-sigma-calibration in Sommerseth 2021). In Sweden, one bear grave in Karats, Jokkmokk, northern Sweden, was AMS-dated to AD 775–1035, based on a bear tooth (Ua-507), while radiometric dating of birch bark from the grave yielded an even older date, AD 437–1014 (St. 11213, Mulk/Iregren 1995). Bear bones from another alleged bear grave at Grundskatan on the island of Bjurön, along the Bothnian coast of Sweden, were dated to AD 709–1160 (Ua-18930, Edvinger/Broadbent 2006, 37, with 2-sigma-calibrations performed for this article using OxCal v4.4.4, IncCal20, Bronk Ramsey 2009; Reimer et al. 2020). However, it is contested whether or not the latter does in fact represent a bear grave (Liedgren/Ramqvist 2012). Concerning bear bones found at known offering sites, only two radiocarbon dates have been acquired from this specific material so far. A bear bone from the offering site by lake Unna Saiva, northern Sweden, was dated to AD 557–774 (Ua-48702, cf. Salmi et al. 2015, 12, new calibration). A bear tooth from the offering site at Näkkälä, Finland, was dated to AD 1174–1267 (Hela-1885/1133, Äikäs 2015, 294, new calibration). This indicates that wild predators continued to have a role in rituals at offering sites into the 13th century, when reindeer became, in general, more and more common as offering gifts. It should, however, be noted that the Finnish Saami areas are distinctive in several ways. For instance, the more extensive reindeer herding known from other Saami contexts was not a widespread enterprise here until modern times (e.g. Tegengren 1952; Harlin et al. 2019; Salmi et al. 2021). A complete lack of bear graves is another peculiarity that sets this region of Sápmi aside.

If the bear bones from Dead Man's Rock on the Seines headland in Norway, which were found together with teeth from cows, sheep/goat and fish, are to be counted as depositions at an offering site, and not a bear burial as previously suggested, their chronology is also relevant. One bear bone from the site has been radiocarbon-dated to 755 BP ± 90 (T-12021). This was previously calibrated to AD 1220–1300 (Myrstad 1996, 9, 38–39), while a new calibration suggests a wider time span and dating to AD 1120–1399 (Sommerseth 2021, table 1: Seines 5). Samples from several other bear individuals from the site were also radiocarbon-dated. The time spans of the three oldest bear bones overlap in the 11th–13th centuries (Seines 1, 4, 5), while the dating results of the two youngest bones do so closely in the 14th–15th centuries (Seines 2 and 3, cf. Sommerseth 2021). Consequently, depositions must have taken place here on at least two separate occasions.

The chronological range of dated bear graves and bear offerings fits well within the general expected deposition period for animal bones at Saami offering sites, but the dates available do not suggest a specific time period in which bears in particular were deposited more frequently. This is of course in part due to sample size, and possibly several source-critical factors, such as the purely coincidental finding of bear graves, the preservation conditions at individual sites, and the selection of species and bone elements various visitors to offering sites have chosen to collect and render to museums. This may affect our current knowledge about the Saami bear rituals, including its chronology. Based on the fact that the oldest bear deposition's 3rd–4th-century radiocarbon date is from the bear grave in Tjeldsund, and the oldest radiocarbon date in Sweden is the 6th–8th-century dating result from the offering site Unna Saiva, we can perhaps hypothesise that the earliest bear rituals among the Saami took place along the Norwegian coast and focused on individual bear graves, while Saami groups in inland Sweden initially placed bear bones at common offering sites such as Unna Saiva, while also taking up the tradition of bear burials from the 8th century. In general, however, the depositions of bear bones in graves and at offering sites overlap chronologically.

The content and context of Saami bear offerings

The reported numbers of bear bones found at offering sites vary from a few fragments to 42 identified specimens at the offering site of Unna Saiva, while the minimum numbers of individuals vary from one to 14 at Unna Saiva (Table 1). The percentages of bear bones are *c.* 1–2 % of the number of identified specimens and *c.* 14–20 % of the minimum numbers of individuals in assemblages from Näkkälä and Unna Saiva, where precise counts are available (Äikäs et al. 2009; Salmi et al. 2015). The finds of bear bones at offering sites consist mainly of cranial bones and teeth (Fig. 3; cf. Salmi et al. 2018, 476). Due to the lack of precise zooarchaeological analysis of the faunal assemblages from many of the sites, the exact numbers of bear bones and their skeletal frequencies at each site are impossible to catalogue at the moment. At Näkkälä, the left and right upper molars of a bear (Fig. 4) were found with decomposed bone material, probably deriving from the maxilla, in an anatomically correct order, suggesting that a complete bear skull was probably deposited at the site. The occlusal surface of the molars was facing up, which means that the skull was probably deposited upside down (Äikäs et al. 2009). At some sites, postcranial bones are also deposited, but the sources often only mention "bones" in addition to teeth and cranial bones, with no further distinction of skeletal elements. A bear vertebral fragment was reported to have been found at Haltenjarka (Gejvall 1956). At Seines, some marrow-split postcranial bones were found, though the majority were cranial bones (Myrstad 1996, 38). The marrow-split bones have later been redetermined as reindeer bones (Sommerseth 2021, 19).

Compared to the hundreds of offering sites described by ethnographer Ernst Manker in northern Sweden, the frequency of bear skulls and teeth at these sites is not very high, even within the region

where they are most common. Despite being concentrated in the area of northern Sweden, there are also great distances between the known locations of bear offerings. The fact that only two relevant finds have come to light along the extensive Norwegian Atlantic coast could, in theory, be related to the bears' habitat; in the 19th century, bears were numerous in Norway, but mostly so in the forested inland regions, while a few larger islands did not have bears at all (Stensli 1993, 40; Myrstad 1996, 7). However, estimates suggest that the bear population has been as large as, or even larger, in Norway than in Sweden during historical periods, with about 65 % of the bears in Scandinavia found in Norway (*c.* 3,100 in Norway vs. 1,650 in Sweden) in the mid-1800s (Swenson et al. 1995). The Prefect's Office in Norrbotten, northern Sweden, reported that 257 bears were killed in the area during the period 1855–1865 (Von Düben 1873, 26, 80), attesting to the great availability of this prey, which should have been at least as frequently encountered on the Norwegian side of the border. Bear burials are also relatively frequent along the Atlantic coast, which suggests that bears were not hunted less here than in the inland Saami areas of today's Sweden, but perhaps that there was a difference in deposition practices in different areas and possibly in different contexts. A similar explanation is likely for the lack of bear burials in the Saami areas of today's Finland and the low frequency of bear bones at offering sites here. Bear bones, teeth and pelts are known from ritual contexts, such as graves and foundation deposits, in Finland from the Iron Age to the 17th century (Leppäaho 1937; Puputti 2010; Kirkinen 2019; see Mannermaa et al., this volume), and bears were probably hunted in the boreal forests of Finland throughout prehistory (Ukkonen/Mannermaa 2017). The knowledge about bear bones at offering sites could be biased due to differences in the thoroughness and methods of recording this tradition. However, it is striking that Norway and Finland not only have few archaeological finds, but there is also little information in ethnographic sources about bear bones at known offering sites (e.g. Qvigstad 1926, who mentions only one instance in Norway, the location on Årøya, Alta, from where bear bones have indeed been retrieved). This further supports that bears as offering matter were less frequent in these areas.

Bear heads and placemaking

It is difficult to know whether the differences in the body parts of the bear that are found at offering sites are related to a specific significance of various elements or to taphonomic processes or sampling strategies. For instance, perhaps only teeth were left at smaller offering sites, while entire skulls and other bones were left at larger offering places. However, cranial bones are present in seven out of nine sites where such details have been recorded, suggesting a special significance related to the bear head. Similarly, it seems to have been common in northern Sweden to place the heads of male reindeer of considerable size at offering sites, while smaller female individuals are mostly represented by long bones (Salmi et al. 2018, 476). Consequently, and not entirely surprisingly, the most impressive and communicative parts of the animal bodies were used to adorn and honour offering sites, as well as to interact with both in- and out-group human actors who encountered the site. These offerings would provide a variety of information concerning, among other things, the status of the site and the people present in the area, including their religious beliefs and contact with non-human powers. While possibly related to what was seen as a valid and valuable offering (Äikäs et al. 2009, 117), the attention to skulls also reflects a persistent cross-cultural fascination with "head-objects", where human and animal heads are transformed into ritual objects that are deposited in ways that seem related to placemaking (Eriksen 2020), i.e. processes that transform nondescript space into recognised places of particular meaning (e.g. Smith 1998, 32–33, 45; see also Tuan 1977). It is possible that the offerings of bear crania or cranial elements were associated with conceptions about bear personhood and its transformations in offering rituals, particularly because the Saami perceived animals as persons, with

animal personhood coming into play relationally in various contexts (Helander-Renvall 2010). The offerings of bear heads and cranial elements may be related to an idea of the head as the locus of personhood, but also to more complex ideas about personhood and its entwinements with places, actions, and events. The ritual head deposition potentially manipulated the identity and personhood of the bear by transforming it into a head-thing, a thing with potency in the ritual place and context, but no longer a social personhood (Eriksen 2020).

In other contexts, depositions of skulls, or head-objects, are not always visible but may be retrieved from subterraneous contexts such as graves and underground building features (Eriksen 2020). Thus, bear burials might perhaps be interpreted in the same way, where the bear person is given transformed significance through rituals. However, since more of the skeleton is usually found in bear graves, and written sources emphasise the necessity of preserving the entire skeleton, these contexts appear more akin to human burials in Saami contexts. It also seems significant that bear burials would involve hiding or putting away the skull and bones, while depositions at offering sites could be seen as display. Consequently, offering sites with impressive skulls cannot be seen only as reflections of local economic adaptations or ritual practices within a broader tradition of Saami offerings: They should probably also be seen as possible instruments of power, where successful hunters or patrons could attain recognition both in this world and the other for their achievements and ability to procure impressive offerings.[4] Furthermore, such offerings would not only have made the place but maintained and enforced it as a vibrant meeting-place in the landscape, in the sense that the (shifting) combination of topography, impressive depositions, and human-animal-thing encounters would have made such sites affect those who came across them, regardless of their prior knowledge of the offering rituals performed there. Other offering sites that were made into distinct places by their users may have later disappeared into oblivion, because they were not the subject of similar attention and impressive depositions during their use.

This underlines that offering sites are not static places. In previous studies, we have called this "site biographies" (Äikäs/Spangen 2016), but we would like here to emphasise the palimpsestic qualities[5] this creates in the sites. The sites are not relics but multi-layered and complex actors in the landscape that are transformed over time and simultaneously transform how people interact with them. One result is that some offering sites may be forgotten due to little or changed use of the sites and of the landscape. This is especially true in areas where Saami groups in the Middle Ages went from mainly hunting and fishing to taking up reindeer husbandry, such as in inland northern Sweden and Norway, or fishing-farming, such as along the Atlantic coast of Norway, as important parts of their livelihood. In the process, they would to some extent be leaving previously familiar landscapes less used (e.g. Mulk 1994; Sommerseth 2011; Andersen 2019).

These reflections are relevant when considering that most of the offering sites known today were in continued use until at least the 19th century. They often have quite conspicuous features or large amounts of offering matter (Äikäs 2015; Salmi et al. 2015; 2018). Among these are the well-known offering sites with preserved metal objects from the Middle Ages, such as coins, jewellery, and arrowheads (Serning 1956). At six out of 15 known offering sites where bear bones have been collected, there are also finds of medieval metal objects and/or coins (Table 1). These sites have often been well

4 This is an argument similar to that formerly made concerning the offering of valuable metal objects at, in part, the same offering sites (Mulk 1996; see also below).

5 The term "palimpsest" originally refers to the practice of writing, erasing and rewriting on the same surface, particularly to describe the re-use of medieval manuscripts on parchment. The term has been used in archaeology to describe traces of various processes in historical landscapes and to describe the archaeological record as such. It is here used to describe how material remains of past activities are not only part of the past but remain present and active in subsequent time periods up until today (see e.g. Bailey 2007).

known locally and sometimes among non-local visitors until the present day. Consequently, there may be other Saami offering sites with deposited bear bones that we are not aware of and whose characteristics might affect the way we understand such sites, especially if bear offerings were more important within the earlier hunting economy that used other terrains. When offering sites are not known from contemporary written sources or oral traditions, we depend on accidental encounters to record them. One example is the find of a piece of reindeer antler, a bear skull and other undefined bones under a frost-fractured boulder in inland Alta, Norway, in 2011, due to surveys for a new powerline in what is today a little used area (Cadamarteri 2011). This was defined as a bear grave, and it was noted that the bones seemed to have been collected and deposited on a layer of birch bark but, if some of the bones are from other species, it might fall under our definition of an offering site.

If we interpret the placement of cranial bones, or "head-objects", in particular at offering sites, as displays of power and as powerful placemaking, the lack of such display could be due to regional and local situations where landscapes were negotiated in different ways. Along the Norwegian coast, this could be related to the necessity of mediating landscape use with non-Saami groups in a more subtle manner, while in today's Finland such display and demonstration may perhaps have been less called for due to less competition for resources. Here, it is worth mentioning that the geographical distribution of a total of 12 offering sites with metal objects from the Iron and Middle Ages, some of them including bear bones as well, is also limited to northern Sweden, apart from one site just across today's border with Norway. The metal objects are typologically dated and have been deposited within a restricted time frame from the 9th to the 14th centuries (Serning 1956; Lund 2015). The distribution of these metal offering sites and the distribution of hidden silver deposits from around the 10th to the 13th centuries along the northern Norwegian Atlantic coastline and in the Finnish areas are mutually exclusive (Zachrisson 1984; Spangen 2005; 2010).

The chronological variation between known offering sites with bear bones, as well as the bear burials, indicate that bear hunting and deposition has been a persistent activity, and that the geographical variation in the deposition of bears at offering sites is more significant than any chronological variation. However, more radiocarbon datings of the bear bone finds are needed to confirm if this initial chronology of the bear offerings is representative. Bone sampling can also be used to explore the geographical origin of the bears through isotope and DNA studies. While our hypothesis would be that bear offerings are the result of local hunting, the many bear graves on the small island of Spildra in northern Troms might suggest otherwise. At least seven bear graves are known from this 21.4 km^2 island in the Kvænangen fjord in northern Norway (Myrstad 1996). Even if the occasional bear may have swum to the island, it is unlikely that bears were more frequent there than in other nearby areas with fewer bear graves, which implies that hunted or dead bears were transported to the island for burial. Keeping this in mind, we cannot rule out that bears or bear skulls may also have been transported around before they were deposited at what was perceived as suitable offering sites.

Conclusion

Bear bones appear at Saami offering sites from the Early Iron Age onwards, and they continued to be deposited until the Late Middle Ages. Offering sites with bear bones are concentrated in today's northern Sweden, with only a very few examples in either Norway or Finland. Bear burials, on the other hand, are found throughout Saami areas in both Norway and Sweden, though not in Finland. We argue that there is a qualitative difference between the ritual deposition of bear bones underground or hidden in caves or underneath rocks on the one hand and the placement of bear skulls overground and clearly visible on the other. This makes the geographical distribution of the offering sites with bear bones versus bear burials interesting. The choice of depositing cranial bones at offering sites

might suggest a display of power and active placemaking, possibly related to territorial rights, which should mean that these processes took on different expressions in different Saami regions, depending on the local economic, territorial, and multi-cultural situation. As described above, valuable metal objects were also deposited in a similar manner in today's inland Sweden, while silver was deposited as hidden hoards along the coast of northern Norway. This might suggest that there was a need for various Saami groups and individuals to visually demonstrate presence and power in inland areas, or that there was more liberty for Saami groups to do so in these areas than along the coast, reflecting different situations of land contestation. Future studies should include more radiocarbon datings to better understand the offering site chronologies, as well as DNA and isotope studies to determine whether the bear skulls represent local hunting or trophies from other places.

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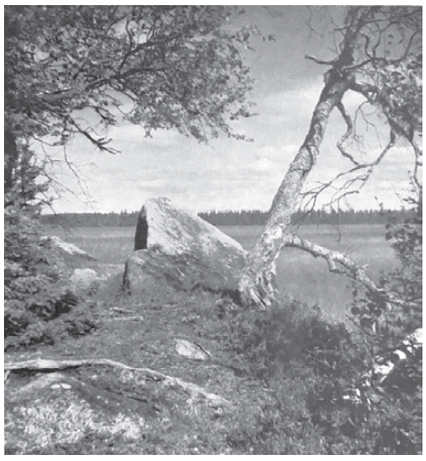


Fig. 1. This rock served as the focal point of the offering site by lake Unna Saiva, Gällivare, Sweden (photo E. Manker, Nordiska Museet archives).

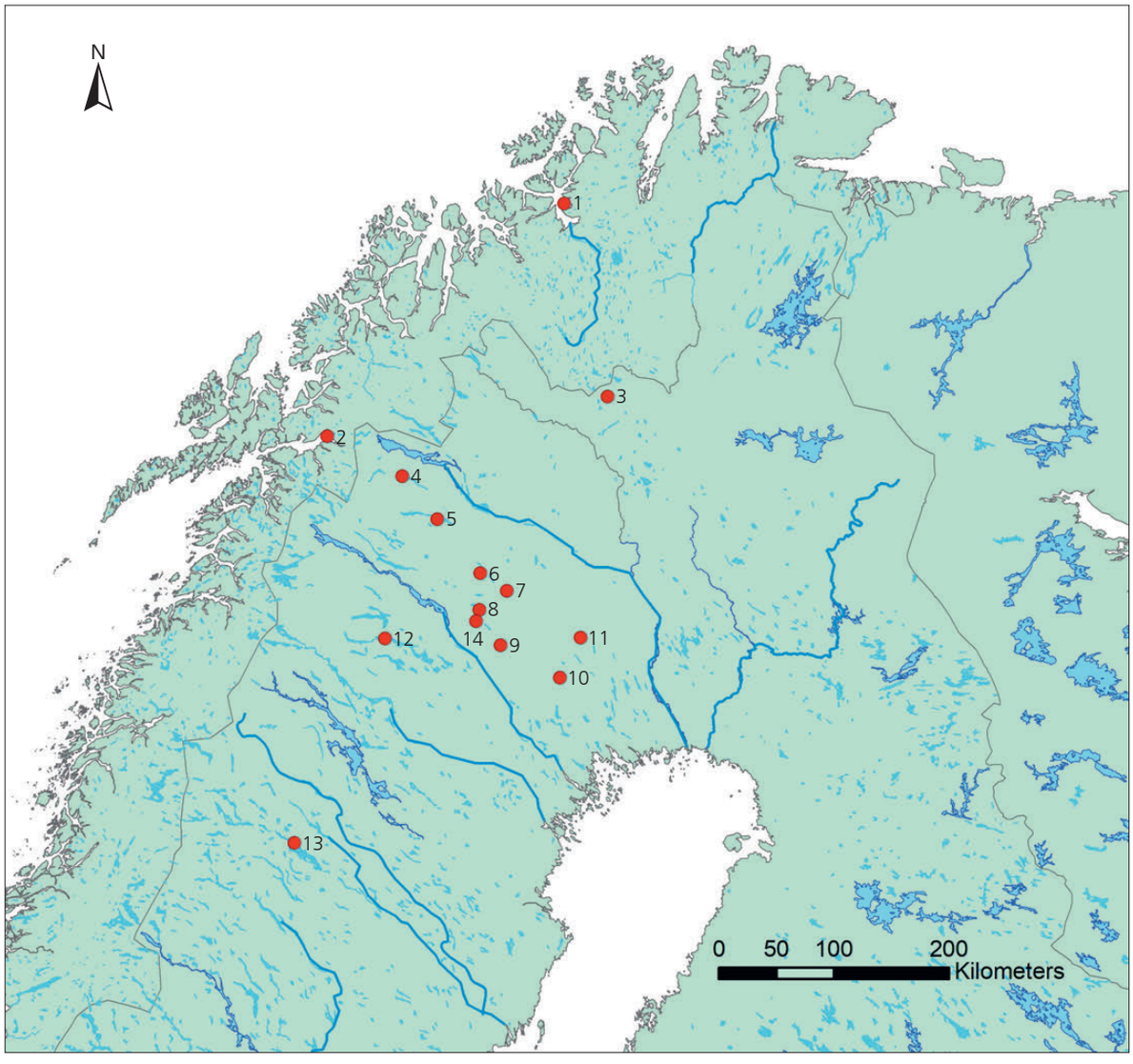


Fig. 2. Map of Saami offering sites with finds of bear bones or information about such bone finds. The numbers in the map correspond with Table 1. Äijihsuálui (Ukonsaari), Inari, Finland, and Aktse, Sirkas, Sweden, are not included, as the information about bear bones/offerings related to these sites is uncertain (graphics M. Spangen).



Fig. 3. Reindeer and bear bones from the offering site of Haltenjárka, Gällivare, Sweden (photo J. Karlsson, Historiska museet/SHM [CC BY]).



Fig. 4. One of the bear molars from the Näkkäla offering site of Enontekiö, Finland (photo A.-K. Salmi).

*Table 1. Saami offering sites with finds of bear bones or information about finds of bear bones. MNI = Minimum number of individuals. *MNI is set to two where the sources only state there were bones from "several" individuals. N/D = no data.*

No.	Site name	Area	Country	Bone elements	MNI	14C-date	Cal. date 2σ	Lab. no.
1	Årøya	Alta	Norway	Cranium, bones	1			
2	Seines	Narvik	Norway	Teeth, cranial, bones	8	245 ± 55	AD 1487–(1950)	T-12026
3	Näkkälä	Enontekiö	Finland	Teeth, cranial fragments	1	830 ± 25	AD 1174–1267	Hela-1885
4	Rautasjaure/ Vidjjavárri	Rautasvuoma	Sweden		N/D			
5	Haltenjarka (Haltiosaari)	Norrkaitum	Sweden	Teeth, bone fragments, vertebra	1			
6	Veiki	Mellanbyn	Sweden	Teeth	1			
7	Saggakuoika (Haltiasuando)	Mellanbyn	Sweden	Cranial bones	2*			
8	Saivo/Saiva	Sörkaitum	Sweden	Teeth, cranial and postcranial bones	2*			
9	Atjekåive	Sörkaitum	Sweden	Not preserved	N/D			
10	Unna Saiva	Sörkaitum	Sweden	Cranial bones	14	1398 ± 56	AD 557–774	Ua-48702
11	Tiirivaara	Sörkaitum	Sweden	Cranium	1			
12	Anakkats	Jokkmokk	Sweden	Not preserved	1			
13	Strömsund-skavan	Umbyn	Sweden	Crania, bones	5			
14	Akkavare	Sörkaitum	Sweden	Crania	2			

Other bone finds	Metal finds	Site ID	Info type	Sources
			Bones finds	Qvigstad 1926, 340; Myrstad 1996
Teeth of cow, sheep/goat, reindeer			Bones finds	Myrstad 1996
Reindeer, antlers, cloven-hoofed animal, mammal, fish	Metal objects, coins	Äikäs 2015, no. 9	Bones finds	Äikäs 2015
Reindeer, antlers, cattle, capercaillie, ptarmigan, lemming	Metal objects	Manker 1957, no. 113	Bones finds	Manker 1957, 134–138; Eriksson 1996; Mulk 2009
Reindeer, goat, cattle, swan, loon, wolverine	Coins	Manker 1957, no. 137	Bones finds	Gejvall 1956; Manker 1957, 146–150
Reindeer, antlers		Manker 1957, no. 160	Bones finds	Manker 1957, 157
Reindeer, birds, antlers		Manker 1957, no 164	Bones finds	Manker 1957, 157–158
Reindeer, antlers, possibly goat, horse tooth	Metal objects	Manker 1957, no. 180	Bones finds	Serning 1956; Manker 1957, 162–165
Horse tooth	Metal objects	Manker 1957, no. 182	Bones finds	Serning 1956; Manker 1957, 165–166; Zachrisson/Iregren 1974, 36
Reindeer, elk, sheep, goat, cattle, beaver, swan, duck, scoter, loon, wood grouse, black grouse, ptarmigan	Metal objects, coins	Manker 1957, no. 186	Bones finds	Serning 1956; Manker 1957, 167–168; Salmi et al. 2015
Reindeer, antlers		Manker 1957, no. 188	Bones finds	Manker 1957, 169; Zachrisson/Iregren 1974, 34
Swan		Manker 1957, no. 246	Bones finds	Manker 1957, 192; Zachrisson/Iregren 1974, 35
		Manker 1957, no. 422	Bones finds	Hallström 1924, 803; Manker 1957, 246
Reindeer bones, ox crania, other animal bones, *sieidi* stone		Manker 1957, no. 181	Written documentation	Manker 1957

Bear skin trade in the late 1st/early 2nd millennium AD – what do we know from Russian sources?

By Andrei V. Zinoviev

Keywords: Russia, Rus', brown bear, bear skin, fur trade, medieval times, Novgorod

Abstract: The fur trade was a vital economic factor in the principalities of medieval Russia, and the skins of brown bears were exported along the southern Baltic coast route around the turn of the 2nd millennium AD. They were also used to pay tribute to the authorities of the Golden Horde. However, most of the bear skins were not exported. Although actual skins are not known from archaeological excavations in Russia, the occurrence of third phalanges of bears testifies to their use.

Introduction

Although it has never been an official symbol of Russia, the brown bear is nevertheless traditionally associated with that country. This situation is partially due to the time when pagan Slavs venerated the brown bear as a totem animal which cannot be called by its real name. The Russian name of the bear – *medved* – means an indirect address to the animal, "which eats the honey" (see Udolph, this volume). Early European and Arab travellers reported tame bears, trained to dance, do simple tricks, and beg (Fig. 1). There were also "bear executions" that had been practiced for a long time. They became especially known during Ivan the Terrible's reign in the 16th century AD (Fig. 2). Sometimes, convicts would be sewn up into a bear skin for dogs to tear apart, along with the unlucky person inside. But, above all, both in the past and today, Russia's vast forests harbour the largest population of brown bears in the world. Early travellers give accounts of meeting them in the course of their travels, reporting, for instance, that "Bears, driven by hunger, left the wood, ran around neighbouring villages and broke into the houses; at the sight of them, villagers fled their houses and died in the cold, a pitiful death" (Herberstein 1550). Such accounts convey the enduring myth about Russia as a country where bears walk the streets everywhere.

Favoured by big game hunters due to their size and ferocity, brown bears have been hunted since prehistoric times for meat, pelts, and fat (see below). Bear skins have been a fur trade item ever since trade connections were established (Kosarev 2009). Below, we provide an account of the bear skin trade in the area of modern Russia (mostly its European part) around the turn of the 2nd millennium AD, based on written sources and zooarchaeological records.

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The bear skin trade in Russia has never been considered a separate entity of the fur trade. Thus, the scarce materials on it are included in the broader accounts of Russia's fur trade. These accounts are rare and may be classified into the following groups: Islamic literature (travel accounts by Arab merchants), western European travel and diplomatic accounts, Baltic Sea trade documents, and Russian diplomatic documents (Martin 2004). Birchbark documents from Novgorod the Great can also be added to this group. As the materials above cover mostly the early 2nd millennium AD, the only source for the last centuries of the 1st millennium AD is the Islamic literature. This designates northern European Russia and the northwestern corner of Siberia, from which the thickest and softest pelts came, as the "land of darkness". Islamic authors of the last part of the 1st millennium AD had an idea of the fur trade from visiting the market in Bulgar (Fig. 3). Although they do not specifically report bear skins, they mention the fur-exporting region – the lands around three lakes – Ladoga, Onega, and Beloe (Fig. 3) –, populated then by the Finnish tribe of the Ves'. The excavations of Ves' settlements revealed, among other items, claw phalanges of bears. Ibn Rusta, a 10th-century Persian explorer and geographer, testified: "The Rus' bring their goods to them [the Bulgars]. All of them [the Rus'] who live on both sides of the aforementioned river [the Volga] bring their goods, such as furs of sable, ermine, squirrel and other [animals] to them [the Bulgars]" (Khvolson 1869). Although sable, ermine, black fox, and marten were traditionally imported into Bulgar (Martin 2004), some bear pelts may also have reached the Bulgar market.

By the end of the 10th century AD, the Viking tribe of the Rus' had become a prominent exporter of luxury furs (Martin 2004). They took control over both the (older) Black Sea-Don-Volga route (Bulgar and Byzantium markets) and the younger one – the southern Baltic coast route (Baltic market), which started in Hedeby or Oldenburg, and ended up at Novgorod the Great, with the most important marketplace in Birka. We know that bear skins were a commodity on the Baltic route from the fact that Ottar, a Norwegian traveller to the court of King Alfred of Wessex (known as Alfred the Great, king of the Anglo-Saxons towards the end of the 9th century AD), counted his wealth in terms of "the tribute which the Fynnes pay […], which was all in skinnes of wilde beastes […]. The richest pay ordinarily […] one Beare, […] a coat of a Beares skinnes" (Martin 2004, 41, after Jones 2001).

During the 11th and 12th centuries, Novgorod the Great became the major fur-exporting city in three directions: to Bulgar in the east, Kiev in the south, and the Baltic market in the west (Martin 2004). Although skins of smaller fur animals, such as squirrel, sable, marten, and ermine, were the main items exported, bear skins were also somehow used in an exchange – at least three birchbark documents found at Novgorod the Great mention bear skins. The earliest document, №722, is dated to 1200–1220 AD (Fig. 4). It contains a merchant's property inventory with its value: "Money of 12 *grivnas*[1] in squirrel skins and silver. Sable skin – 4 *grivnas*. Nets, cloths, and canvases – 3 *grivnas*. **Bear skin** – 2 g*rivnas*" (Birchbark Document №722). Another document, №65 from 1300–1320, contains business orders from Matphei to Esif Davidov: "Compliments from Matphei [Matthew] to Esif Davidov. Bring me **two bear skins** […]" (Birchbark Document №65). Finally, birchbark document №354 from 1340–1360, which lists household orders from Ontsifor to his mother, gives the order to "send two tagans, karakul, labels, spindles, sacks and **a bear skin**" (Birchbark Document №354).

1 The *grivna* was a currency and a measure of weight used in the Kievan Rus' and other East Slavic countries since the 11th century. 1 *grivna* of silver (204 g) = 4 *grivnas* of *kuna* (51 g) = 80 *nogatas* (coins) = 100 *kunas* (marten skins) = 200 *rezans* (coins) = 400–600 *vekshas* (squirrel skins).

One more mention of bear skins can be found in the report of Plano Carpini,[2] who travelled through southwestern Russia in 1246. He reported that a Saracen (a term for a Muslim merchant acting as a tax collector in the region), sent by Güyük Khan[3] of the Golden Horde, asked the local people to pay the tribute, among other items, of **one white bear skin** (Rockhill 1998).

Zooarchaeological records

Bear bones are very rare in Russia's zooarchaeological published records,[4] not only for the time period described here, but also before and after that. This conclusion is based on a number of sources (Lapshin 2009; Zinoviev 2009; 2014; 2021 in print; Maltby 2013; Hamilton-Dyer et al. 2017; Brisbane et al. 2020; Maltby et al. 2020). Many of the known sites yielded single third phalanges of bears (Table 1: excavation sites at Novgorod the Great of Gorodishche [1 item], Troitsky X–XI [9], and Desyatinny-I [1]; see Figs. 5–6). Phalanges may have been attached to imported bear skins, although these bones were sometimes also used as pendants (Maltby 2013). Two phalanges from the Troitsky XI excavation site at Novgorod the Great (Table 1), for instance, show disarticulation marks near their proximal end, indicating that they had been separated from the rest of the foot and the skin. Therefore, it may only have been the third phalanges themselves that were brought to the properties rather than the skins (Maltby et al. 2020). Also, while in Gorodishche and Georgii (Fig. 5) bear bones are associated with count's seats, Novgorod's sites that yielded bear bones are well outside of Detinets – the place of power at Novgorod the Great. So, bear bones are associated here with ordinary houses. There are no indications of bears and/or bear skins used as grave goods, as was the practice in some parts of central Europe and Scandinavia from the last centuries BC until Christianisation. Evidence of actual skins is rare, whereas claws are much more numerous (Wamers 2009; Grimm 2013; Beermann 2016; Schmölcke et al. 2017; see also different contributions in this volume). Although archaeological wet layers of medieval Russian cities, including those at Novgorod the Great, favour the preservation of organic matter, no preserved parts of bear skins are known or have been reported so far.

Discussion

The fur trade was a vital economic factor in Russia's principalities (then known as Rus') and the mid-Volga lands (Martin 2004). Based primarily on smaller species, such as squirrel, marten, and sable, the fur trade in the modern European part of Russia included pelts of other fur animals, such as brown bear, too. The scarce written sources do not provide references to the volume of the bear skin trade; skins of brown bear were exported along the southern Baltic coast route around the turn of the 2nd millennium AD. Bear skins were also used to pay tribute to the authorities of the Golden Horde. However, most of the bear skins were not exported (domestic trade). The predominance of the third phalanges (claw phalanges) in archaeological finds from medieval Novgorod the Great and its vicinities suggests that skins were used by the inhabitants of particular properties, often the places of power (see Tianina, this volume). Bear skins, therefore, might have been brought there as trophies –

2 Plano Carpini, or Giovanni da Pian del Carpine (*c.* 1185 – August 1, 1252), was a medieval Italian diplomat, archbishop and explorer, and one of the first Europeans to enter the court of the Great Khan of the Mongol Empire (Montalbano 2015).

3 Güyük Khan (*c.* March 19, 1206 – April 20, 1248) was the third Great Khan of the Mongol Empire.

4 Some bear bones are, without doubt, hidden in archives, still waiting for zooarchaeological analysis.

evidence of the bravery of the owner of the property (Oehrl 2013). The bear-hunting tradition with just a spear among the Russian nobility persisted up to the Great October Revolution in 1917 (Shirinsky-Shikhmatov 1900; see Fig. 7).

There is no doubt that at least some of the details of the domestic bear skin trade in Russia at the turn of the 2nd millennium AD can be reconstructed in the future by a careful analysis of bones and bear-related furnishings in early settlements' layers and graves (Smith 2012; see Syrovatko et al., this volume).

Acknowledgments

I am grateful to Dr. Oleg Oleinikov (Institute of Archaeology of the Russian Academy of Sciences, Moscow, Russia), who kindly provided osteological material from archaeological excavations at Novgorod the Great for study. Special thanks to artist Vadim Gorbatov (Moscow, Russia), who allowed the use of his splendid painting. Dr. Mark Maltby (Bournemouth University, UK) provided valuable information and comments.

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Fig. 1. Buffoons in a Russian village. Painting by François Riss, 1857 (courtesy of the Museum of V. A. Tropinin and Contemporary Moscow Artists).



Fig. 2. Execution by bear under Tsar Ivan Vasilievich the Terrible. Watercolour by Nikolai Samokish (after Kutepov *1896).*

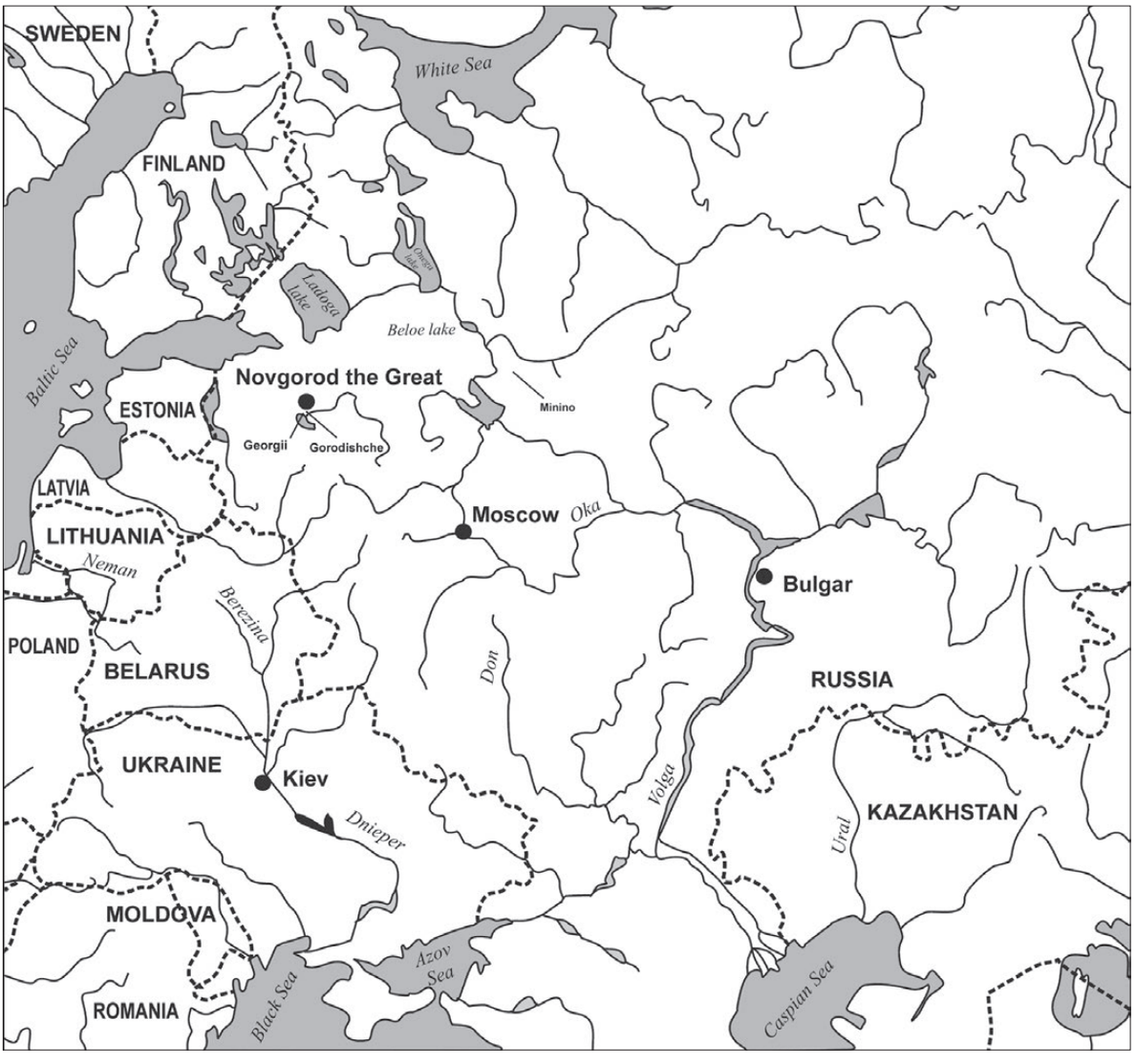


Fig. 3. Map of Russia and adjacent areas discussed in the article.

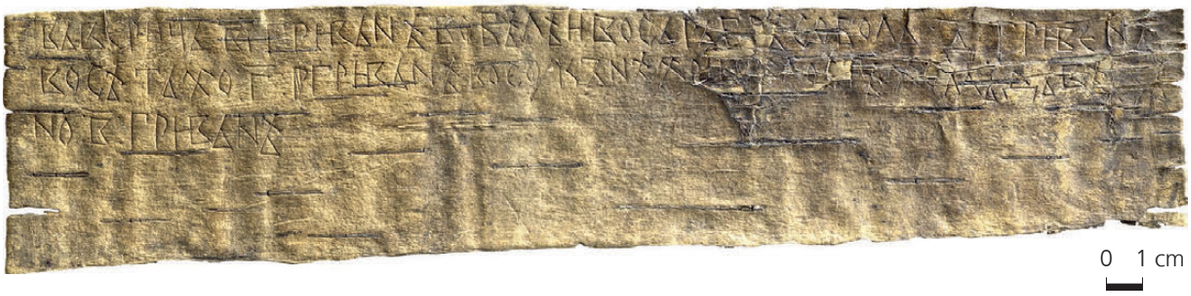


Fig. 4. Birchbark document №722 from Novgorod the Great, 1200–1220 AD (courtesy of the Novgorod State United Museum).

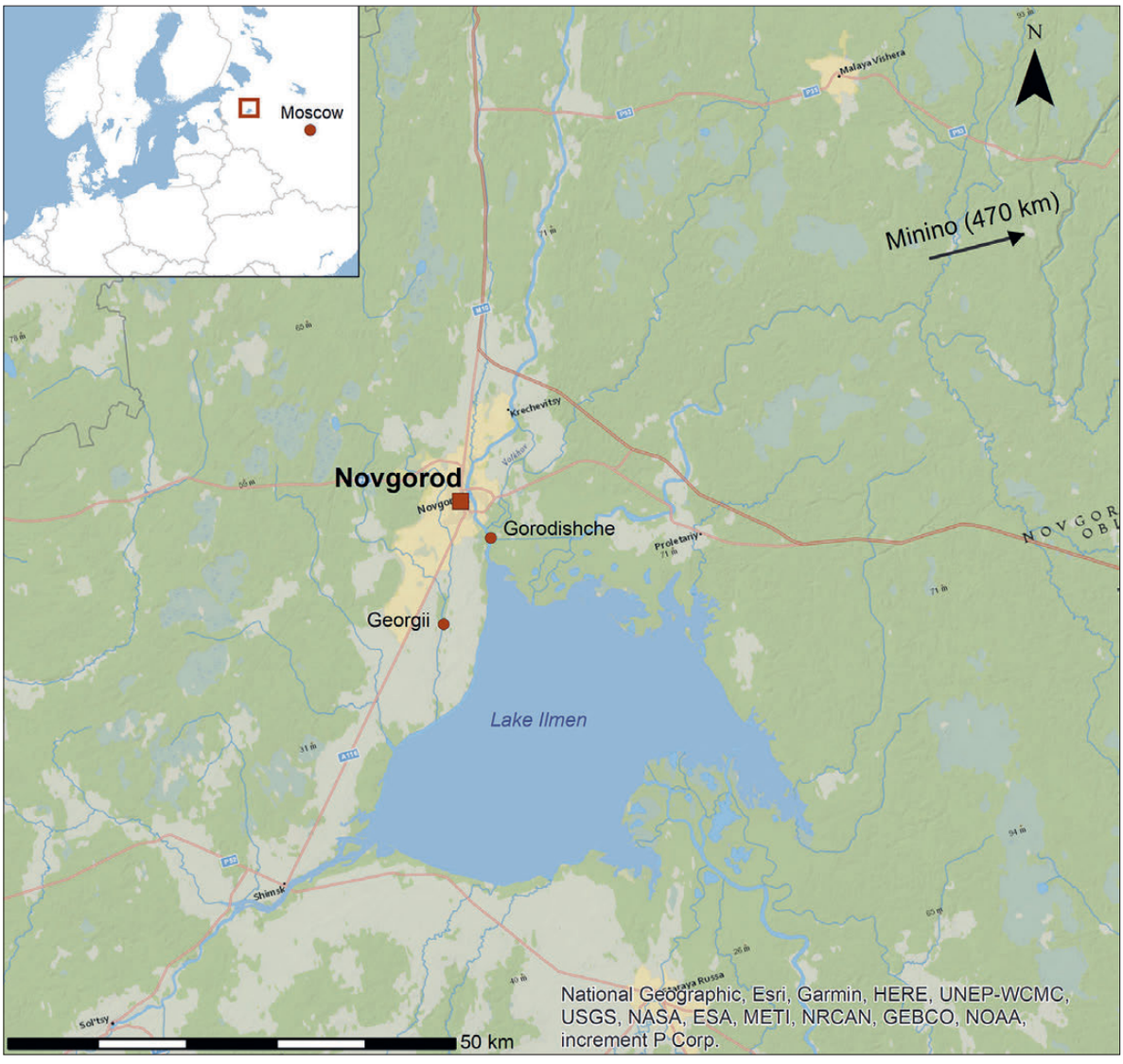


Fig. 5. The area of Novgorod the Great (Veliky Novgorod), with the locations of Gorodishche, Georgii, and Minino indicated.



Fig. 6. Third (claw) phalanx of a brown bear from the Desyatinny-I excavation site, Novgorod the Great, Russia (after Zinoviev 2009).



Fig. 7. Bear spear-hunter. Painting by Vadim Gorbatov (courtesy of V. Gorbatov).

Table 1. Number of bear bones from excavations in Novgorod and its territory (NISP = number of individual specimens; with NISP of third phalanges marked in bold; after Zinoviev *2009;* Hamilton-Dyer *et al. 2017;* Maltby *et al. 2020).*

Sites	Gorodishche	Gorodishche	Georgii	Troitsky X	Troitsky XI	Troitsky XI	Troitsky XI	Desyatinny-I	Minino
Century	9th–10th	11th–12th	9th–10th	10th–early 12th	10th–early 12th	mid 12th–early 13th	mid 13th–early 15th	late 10th–early 12th	late 12th–13th
NISP	**1**	4	1	**1**	**2**	**4**	**2**	**1**	2

The bear cult in medieval Novgorod, based on archaeological finds

By Elena A. Tianina

Keywords: Russia, medieval Novgorod, archaeology, paganism, zoolatry, bear cult, amulets, chronology, topography

Abstract: The bear cult belongs to the oldest layers of religious beliefs in bear-human relations. It reflects the mutual influence of Finno-Ugric and Slavic cultural traditions. These religious beliefs were also present in medieval Novgorod. The article examines Novgorod's collection of amulets made of bear fangs, other teeth, and claws along with their chronology, topography and semantic significance. As the study shows, bear worship emerged in Novgorod at the turn from the 10th to the 11th century, based on interactions with the multi-ethnic rural environment, where it has been documented since ancient times. Amulets made of bear teeth played a role as apotropaic objects, connected with the cult of Veles and, probably, also with "bear feast" rituals known from the ethnography of the Finno-Ugrics and other peoples of northern Eurasia.

Zoolatrous cults belong to the oldest forms of religious beliefs. The worship of animals is the basis of totemism, a primitive religion, the essence of which is the worship of an animal, the ancestor of the tribal collective. However, zoolatry far outlived both the primitive social system and totemism as one of the variants of its religious worldview. In the system of pagan beliefs of various peoples, animals became part of the world mythology and acted as images associated with various deities, spirits, mythological characters, or epic heroes. At the same time, both in the perception of the revered animals in faunal composition as well as in the mythological plots associated with them, the habitat plays a huge role, as man's perception of the animal in mythology is directly related to the perception of it in real nature (Gura 1997, 18).

The bear cult represents one of the oldest, most widespread and most enduring forms of zoolatry. Bear worship arose and developed from the Stone Age onwards throughout practically the whole habitat of this animal. At the same time, this cult reveals a number of common features among various peoples who lived in different periods in the forest zone of northern Eurasia. Among them are the empowerment of the bear by attributing anthropomorphic features and other mediative functions to it (mediation between the worlds), connection with the cult of ancestors, representations of the bear as the forest master, the patron of all other animals, the mating symbolism of the bear, its connection with "werewolfism" (shapeshifting), shamanism, and witchcraft (Gura 1997, 160–167; Kosarev 2003, 40–59; Koškarova 2013, 7–8). In the culture of many peoples, including the eastern Slavs, there is a taboo attached to the bear's name (cf. Udolph, this volume; cf. Panagl 1984, 148–149; Kosarev 2003, 40–42; Slavic antiquities 2004, 214).

When speaking about the continuity of the tradition, we can trace the transformation of the bear cult in cultures at different stages of socio-economic development. Thus, researchers identified the

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 629–638 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134353

most ancient, "classical" variant of the bear cult, characteristic for the peoples of the Far North, which is best presented and studied in the case of the Ob'-Ugrians (Kulemzin 1984, 85; Koškarova 2013, 8). The Finno-Ugric peoples of the Ural and Volga region followed a "transitional type" of bear cult, in which some of the most ancient totemistic representations had died out/disappeared, while such mythologemes as "bear – descendant of a deity", "bear – ancestor" (in which classical totemism is replaced by the cult of human ancestors), "bear – man" (i.e. shapeshifter), "bear – forest master" and "bear – epic/cultural hero" came to the fore (Koškarova 2013, 9–14). Similar features of bear worship among the Baltic-Finnish peoples are recorded in the Kalevala (Kalevala, 437–451). In the context of Slavic agrarian culture, the bear cult did not dissolve and disappear as a relic of the primitive epoch, but instead developed and acquired new features. For example, the totemistic component in the cult of the bear as a primary ancestor transformed into a general idea about the kinship of man and bear (Gura 1997, 161–163), while the bear as the "master of the forest" and the patron of all other animals then became the patron and protector of livestock (Slavic Antiquities 2004, 212–214).

Novgorod (Fig. 1) was undoubtedly part of the geographical area of bear worship. A group of apotropaic objects associated with bear worship stands out among the finds of pagan antiquities in the cultural layers of Novgorod. These are amulets made of bear fangs (canine teeth) and other teeth. This type of the Novgorod pagan amulets is the most widespread in time and space. "Bear amulets" are part of a large group of apotropaic objects, made of the fangs, other teeth, or bones of various animals (Tianina 2011, 162–164 fig. 2.1–4). The Novgorod collection of these items is unique not only in its number – 239 amulets were found so far – but also in terms of the dynamics in the distribution of amulets associated with different animals, which allows us to identify the chronology as well as the topographic pattern of their occurrence. All this is possible due to the well-developed stratigraphy of the cultural layers of Novgorod and the large-scale excavations of entire farmsteads or even farmstead complexes instead of only parts of the settlement.

So far, 89 amulets associated with the bear cult have been found in Novgorod's cultural layers. Among them, the vast majority (82 findings) is represented by objects made of bear fangs (Fig. 2). In addition to these, three amulets were made of bear molars (Fig. 3.1), three of claws (Fig. 3.3–4), and one of a bear incisor (Fig. 3.2). One more item is described by the excavators as a bear's tooth, but with no further details provided. It is obvious that such rare types as amulets made of incisors and molars were not traditional for the Novgorod population. Possibly, such objects were included in a necklace, with a fang for the enhancement of protective or benevolent effects. All amulets made out of fangs or other teeth show a hole for suspension that has been drilled in the middle section or at the base; they do not differ in appearance from similar amulets known in other cultures. Three amulet-fangs are, in fact, blanks, as their holes are not drilled all the way through, while, in case of a further amulet, the hole is replaced by small grooves in the fang. It should be noted that, in reality, there should have been many more amulets made of bear fangs and other teeth, as they could have been carried not only by hanging, but also by being placed in a leather pouch or sewn onto clothes. It is extremely difficult to identify such amulets with archaeological methods because they do not have a hole and thus do not differ in any way from common stray finds of bear teeth or claws, which belonged to hunting prey at the farmstead. The same can be said concerning the possible use of "bear amulets" in Novgorod, not only as personal apotropaic objects, but also for other magical purposes. For example, according to ethnographic data, parts of bears (claws, teeth, bones, skin) were used as amulets in stables for cattle or at children's cradles (Slavic antiquities 2004, 214). In such cases, the amulet was placed next to the protected object. It is possible that the above-mentioned amulet without a hole but with grooves for a string or rope was used in such a manner. An object fastened that way could have certainly slipped and got lost if worn by a person.

In 2011–2012, 59 Novgorod "bear amulets" were analysed osteologically by N. D. Burova, a researcher from the Laboratory of Archaeological Technologies of the Institute for the History of Mate-

rial Culture at the Russian Academy of Sciences. Results show that both upper and lower bear teeth were used for amulet-making, while these originated from both old (Figs. 2.9; 3.2) and very young individuals. In all cases in which the sex of the animal could be determined, the fangs were from male bears.

Amulets made out of bear teeth were found in all five ancient town districts of medieval Novgorod. The finds came to light at 14 excavation sites (Fig. 4). The archaeological collections from the two main Novgorod excavation sites stand out: Nerevskij (27 specimens; see Figs. 2.1–4; 4.1) and Troickij (33 specimens; see Figs. 2.8–10; 4.2). At the Troickij excavation site there were found one amulet made of an incisor, three made of claws, and one more made of a bear molar with drilled holes for wearing (Fig. 3). Two further amulets made of bear molars were found at the Nerevskij and Michajlovskij excavation sites (Fig. 4.14). Another bear tooth amulet comes from the Rogatickij III excavation site in the carpenters' district of the town (Fig. 4.7). In addition to the two main excavation sites, one specimen of a bear fang amulet was found each at the Dmitrovskij (Figs. 2.6; 4.3) and Tichvinskij (Fig. 4.4) excavation sites in the Nerevskij town district, as well as at the Desjatinnyj excavation site (Fig. 4.5) in the Ljudinnyj town district. In the Slavenskij town district, such finds came to light at the Il'inskij (five specimens; Figs. 2.5; 4.9), the Slavenskij (two specimens; Fig. 4.8), the Posol'skij 1999 (one specimen; Fig. 4.13), and the Nutnyj (one specimen; Figs. 2.7; 4.10) excavation sites, and, in the Plotnickij town district, at the Ljubjanickij (two specimens; Fig. 4.11), the Fëdorovskij (four specimens; Fig. 4.12) and the Rogatickij III (three specimens; Fig. 4.7) excavation sites. One more find comes from the Michajlo-Archangelskij excavation site in the Zagorodskij town district (Fig. 4.6).

A total of 80 finds of "bear amulets" were suitable for dating. For nine further specimens dating is impossible because they either come from the upper redeposited layer or from the drainage trenches, or they were not documented properly. The dating of the amulets made out of bear teeth (Fig. 5) drastically differs from the general chronology for amulets made out of animal teeth and bones in Novgorod, the majority of which is dated to the 10th and 11th centuries (Tianina 2011, 160–161 fig. 1.1,3). On the contrary, "bear amulets" are practically absent in the 10th-century layers, i.e. in the pagan period of the city. Only two bear amulets can be dated to this period: one of these, originating from the Troickij excavation site, is made of a molar; the second one, found at the Nerevskij excavation site, is made of a fang. Moreover, based on stratigraphy, both early specimens can be dated rather to the end of the period in question (turn of the 10th to the 11th century). Below this, in the lowest 10th-century strata of the excavation sites, no "bear amulets" were found.

Around the turn of the 10th to the 11th century, amulets made out of bear fangs became very popular. Their occurrence at different excavation sites corresponds with the general population density and the number of finds from different parts of the town. Such objects that date to the beginning and the middle of the 11th century were found exclusively in the Ljudin and the Nerevskij town districts, where the most ancient centres of medieval Novgorod were located. Bear teeth dating to the second half of the 11th century have already been documented in the other town districts. This widespread distribution pattern of these amulets in the city layers has been observed as occurring up until the middle of the 14th century, while, during later times, finds of "bear amulets" became sporadic. It should also be noted that the teeth in the layers that are younger than the first half of the 14th century (including undated finds from the upper layer) come exclusively from the Nerevskij excavation site, where these layers contain rich archaeological material (in contrast to the Troickij excavation site, where medieval layers younger than the 14th century have essentially not been preserved).

The topography of finds can be traced by studying the collections of the Nerevskij and Troickij excavation sites, where entire homestead complexes were uncovered. As the study has shown, the find distribution is generally uniform across the homesteads. However, individual features can still be noted. At the Nerevskij excavation site, there are homesteads in which single bear fang amulets are found consistently in layers dating from the 11th to the 14th centuries, which may indicate a stable tradition of wearing them. At the Troickij excavation site, only single amulets come from the home-

stead complexes. An exception are three amulets from the first half of the 12th century, which originate from homestead U. The fourth amulet, found in the strata of the late 11th century, belongs to the same complex. Stratigraphic analysis of this part of the Troickij excavation site demonstrates that these layers belong to the same building period, during which the owners of this homestead had a high social status and were involved in trade. It is also the period of the farmsteads to which finds of coins, weights, and lead seals of goods belong. Of particular interest is the birch bark manuscript no. 952, which mentions trade goods sent to Smolensk as well as the huge amount of 400 *grivnas*. Taking into account the traditional connection of the bear cult with the Finno-Ugric peoples, objects of Baltic-Finnish origin in the contemporary archaeological complex (bronze equal-shouldered fibulae, chain carriers, etc.) should be mentioned (Stepanov et al. 2015, 271–273).

In general, the chronology and topography of "bear amulets" in Novgorod demonstrate that the bear cult, at least in the form that has been discussed, was not characteristic for the first settlers in the city. Its emergence and rather rapid spread in the urban environment from the beginning of the 11th century onwards was caused by the intensification of the socio-cultural relationship between Novgorod and its surroundings. The traditional character of the bear cult in the districts around Novgorod since the most ancient times is evidenced not only by finds in burials (Voronin 1941, 161–162), but also by most ancient toponyms connected with bears in the area of Novgorod Poozer'e. Another piece of evidence is the co-called "She-Bear Stone" (Novgorod Poozer'e, near the village of Verchovje, 20 km from Novgorod), a cult object, named after its shape, which resembles a sleeping bear (Šorin 1998, 223–224). The veneration of this cult stone persisted until modern times.

In the uniform, multicomponent culture of Novgorod and its surroundings in the period from the 10th century to the first half of the 13th century, the tradition of wearing "bear amulets" was established in the urban culture and was reflected in the worldview of the Novgorodians. The adoption of Christianity did not stop bear-worship in Novgorod. On the contrary, the tradition of wearing "bear amulets" coincided in time with the beginning of Christianisation or a little later. This observation vividly illustrates the complex processes of the spiritual interaction and intertwining of different cultural traditions in the medieval town. Religious syncretism was not limited to the incorporation of Christian beliefs into the existing pagan environment, but had a much more multifaceted and multidirectional character, which reflected the peculiarities of the region.

The question of the semantic meaning of "bear amulets" in Novgorod is a complicated and complex one. In the present case, it is difficult to assume the preservation of the bear cult in its "classical" form with a totemic basis. The semantics of these magical objects in medieval Novgorod certainly reflect a deeply "transformed" model, far removed from representations of the bear-totem and associated with more developed forms of zoolatry.

E. E. Levkievskaja, while developing a typology of the Slavic amulets, attributed the semantics of animal teeth and claws to the category of amulets with warding-off magic, which was believed to be based on inflicting a magical blow to the enemy. Such properties were attributed, first of all, to the fangs of predators, which served as basic tools for attacking and destroying an opponent (Levkievskaja 2002, 73–79). This meaning of an amulet made of a bear's fang (as well as of that of any other predator) is certainly universal for all forms of zoolatric cults. The use of bear fangs and claws as the strongest warding-off amulets against evil spirits is documented for many peoples in bear cult areas (Kosarev 2003, 41). This also corresponds with the worship of the bear in so-called "folk orthodoxy". According to north Russian and Belarussian beliefs, the bear was able to ward-off evil spirits, acting as an animal that could detect and disarm and/or remove the so-called spoilage and evil eye. The same properties were allocated to parts of the bear's body, first and foremost to its teeth and claws or paws (Slavic Antiquities 2004, 211–213). The worshipping of the bear as a guardian of cattle in herding magic also has a protective character (Voronin 1941, 169; Gura 1997, 165). The Novgorod material is thus not an exception. The vast popularity of fangs among the "bear amulets"

of Novgorod stresses the warding-off function of the amulet as its basic characteristic, reflecting the desire of its owner not just to acquire the strength and agility of the beast, but also to receive its magical protection against evil powers. However, the semantic meaning of the amulet made out of a bear fang was definitely not restricted to general protective representations. The study of the chronology and topography of the Novgorod collection of amulets made out of animal teeth and bones shows that the bear cult was much more widespread and characteristic for the Novgorodians than any other zoolatrous cult with warding-off semantics. For example, amulets made out of bear fangs are three times more common than those made out of wolf fangs, and their popularity is not limited to a narrow early period, as is the case with the amulets made out of wild boar tusks.

The discussion above shows that the bear cult, introduced into the urban environment in the late 10th/early 11th centuries, superimposed its own mythological picture of the world onto the religious views of Novgorodians and organically blended into them. In this regard, we should keep in mind that, in studies of eastern Slavic paganism, the connection of the bear cult with one of the main deities of the Slavic pantheon, the god Veles, has been repeatedly mentioned. The image of this deity is multifaceted and, in many respects, overlaps with the elements of the worldview that characterise the bear cults of other peoples of northeastern Europe. In Slavic tradition, Veles was considered to be a patron of animals, including cattle, had mediatory functions, and was associated with the cult of ancestors as well as with the priestly class of the Old Rus' – the *volhvs* (Rybakov 2002, 409–410; Zasedateleva 2003, 158–160). Exactly these features were assigned to the bear in folk tradition. Also remarkable is the connection of Veles with the calendar holidays, during which dressing up or "walking" like a bear took place (Koljada, Maslenitsa), as well as the manifestation of the bear cult in the veneration of Christian saints such as St Blaise and St Nicolas, who replaced the pagan Veles in the Christian epoch (Voronin 1941, 151–155; Rybakov 2002, 407–410).

The form of bear veneration expressed in the wearing of a bear (tooth) amulet correlates with one more aspect. Amulets made out of bear fangs, claws and other body parts could not have been just accidentally found or taken from hunted animals. Their manufacture and wearing is directly related to one of the most important rituals associated with the veneration of the bear – the so-called "bear feasts". These rituals, complex in execution and semantics, were connected with bear sacrifice or bear hunting and are well known among the different peoples of northern Eurasia, including the Finno-Ugrics, who had great influence on the culture of medieval Novgorod (cf. Piludu, this volume, for Finland; cf. Voronin 1941, 175–177; Vasil'ev 1948, 78–104; Kosarev 2003, 42–48). "Bear feasts" included either the sacrifice of a bear bred in captivity (periodic feasts), or rituals performed over a bear that had been killed in a hunt (sporadic feasts). In some cases, the fangs, other teeth, and claws of the bear killed during these "bear feasts" were preserved and used by the participants as apotropaic objects (Kosarev 2003, 42–44). Therefore, it cannot be excluded that Novgorodians were participants in such rituals and subsequently kept the worshipped objects near or on themselves, or in their homesteads. This assumption is well established concerning, on the one hand, the stability of the tradition of wearing the bear' amulets and, on the other hand, on single finds in homesteads.

Bear claw amulets need to be addressed as such. The rarity of such finds in Novgorod can be explained by the significance of this type of amulet, which reflects the mythological beliefs of the population in the north of eastern Europe. At the end of 19th century, researchers mentioned bear bones in Slavic burial mounds (*kurgans*) of northwestern Rus', dating to the period from the 8th to the 10th centuries, as well as in the *kurgans* of the southern Ladoga region (Voronin 1941, 162). That being said, terminal phalanges are the only bear bones found in this context (Peredolskij 1898, 175). Thus, we can say that bear paws with claws were added to the pyre of a human as a funerary offering and had a special mythological meaning. In this context, bear claw amulets form a semantic unity with another category of objects – clay "bear claws", which are found both in Finno-Ugric and Slavic burials of the 9th to 11th centuries in northeastern Rus' (cf. also Gustavsson/Ljungkvist, this

volume, on Åland). N. N. Voronin attributed these exclusively to the funeral cult, rightly noting that such items could hardly have been worn during the lifetime of the buried (Voronin 1941, 163–166). According to A. S. Uvarov, the semantics of clay and bear claws in the burial cult of the Meryans reflected the idea of the "world mountain", to which the soul was taken after death with their help (Uvarov 1872, 700–703). Similar beliefs are recorded for Lithuanian paganism, in which bear claws were put on the funeral pyre for the same purpose, but this is recorded only in later sources (see Grimm, Synthesis, this volume; cf. Chronicle of Lithuania and Samogitia 1975, 31). In the area of the Balts, bronze-mounted bear claws, which functioned as amulets, are often found in burials of the 13th–15th centuries, while such findings are almost unknown in settlements of the same period (Svetikas 2009, 171–200). Thus, the bear claws of the Middle Ages were an attribute of the funeral cult, linked to mythological beliefs about the path of the soul of the deceased to the afterlife. This explains well the exclusivity of such finds at the Novgorod residential estates. It should also be noted that bear fangs (neither drilled or untreated) do not occur in the funerary monuments of the region.

Amulets made out of bear fangs are well known, not only in Novgorod but also in other medieval cities of the northwestern and northeastern Rus' (Darkevič/Borisevič 1995, 234 tables 6–7, 276 table 48.1; Sedova 1997, fig. 78, 18). These items are dated to the pre-Mongolian period, which correlates quite well with the chronology of the Novgorod archaeological material. It can be thus assumed that in the urban environment of the northern part of medieval Rus' this type of pagan belief was part of the cultural tradition.

Finally, the collection of "bear amulets" confirms that Novgorod was part of the cultural space of the northern Eurasian forest zone in which the bear cult existed. The traditions of bear worship, which emerged in the Novgorod region in ancient times, survived the totemic era and still existed in the medieval period. A bear amulet was multifunctional in its purpose, playing the role of an apotropaic and protective object against evil ("unclean") spirits, spoilage, and the evil eye. It was associated with some aspects of the pagan cult of Veles and possibly with the ritual of "bear feasts". The bear cult in the form of wearing amulets made of bear fangs and other teeth correlates with a number of traditional mythological beliefs and ritual practices documented for the Finno-Ugric and Slavic populations of the region in question. This tradition arose in the urban environment at the turn of the 10th to the 11th century on the basis of connections of the urban population with the multi-ethnic inhabitants of the Novgorod surroundings, in which it existed from ancient times and remained in use, as is testified by a number of features.

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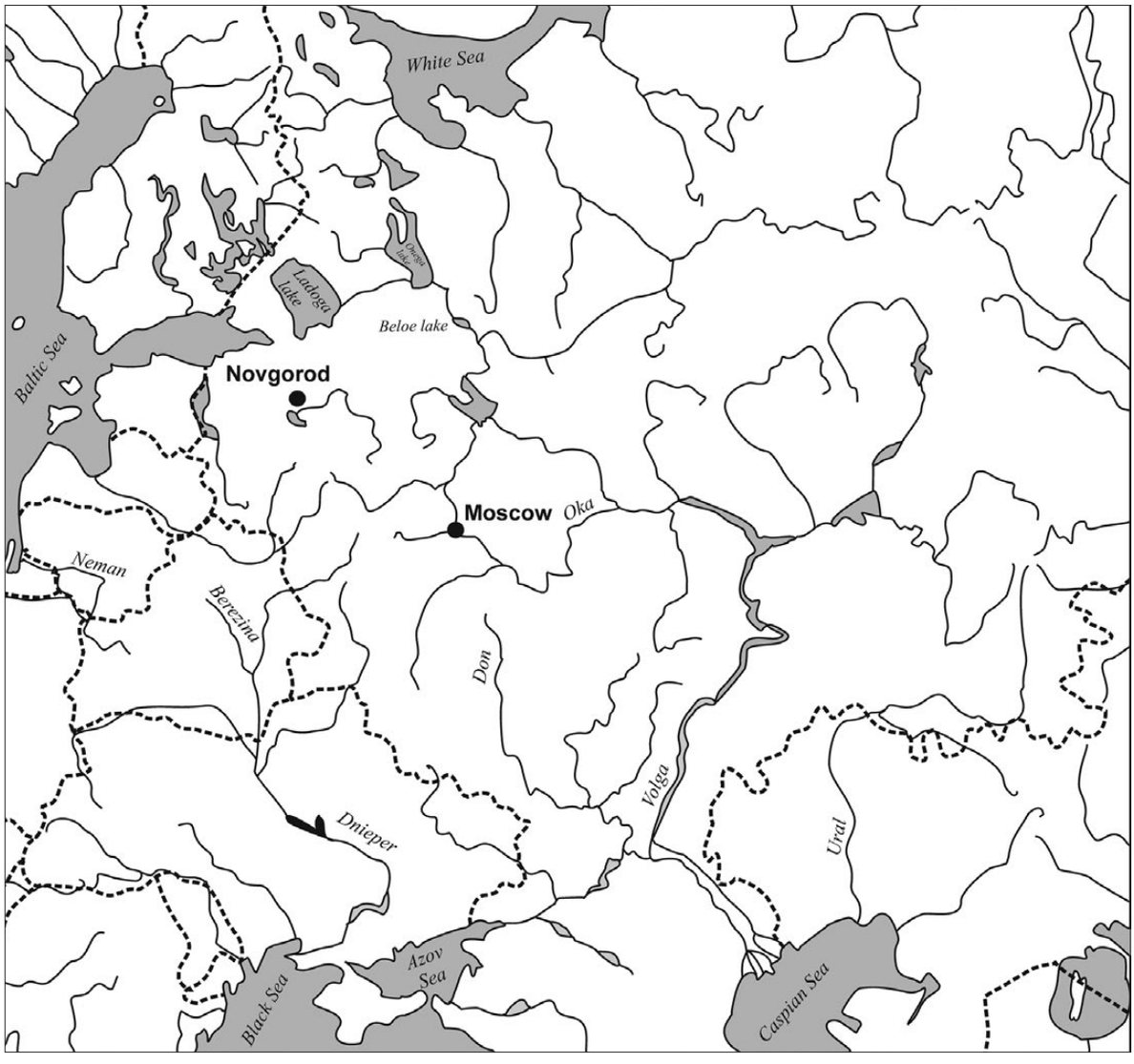


Fig. 1. The Nowgorod area.



Fig. 2. Amulets made of bear fangs (excavation site, [layer]-[square]-[number]). 1: Nerevskij, 3-489-1880; 2: Nerevskij, 22-1435-28; 3: Nerevskij, 20-1695-6; 4: Nerevskij, 27-835-1262; 5: Il'inskij, 20-111-38; 6: Dmitrievskij, 15-70-12; 7: Nutnyj, 30-51-11; 8: Troickij, 18-748-59; 9: Troickij, western trench-24; 10: Troickij, 15-417-23 (photos E. A. Tianina).



Fig. 3. Amulets made of bear teeth and claws. Troickij excavation site ([layer]-[square]-[number]). 1: 16-1038-20; 2: 14-879-28; 3: 10-b/sq.-40; 4: 2-833-155 (photos E. A. Tianina).

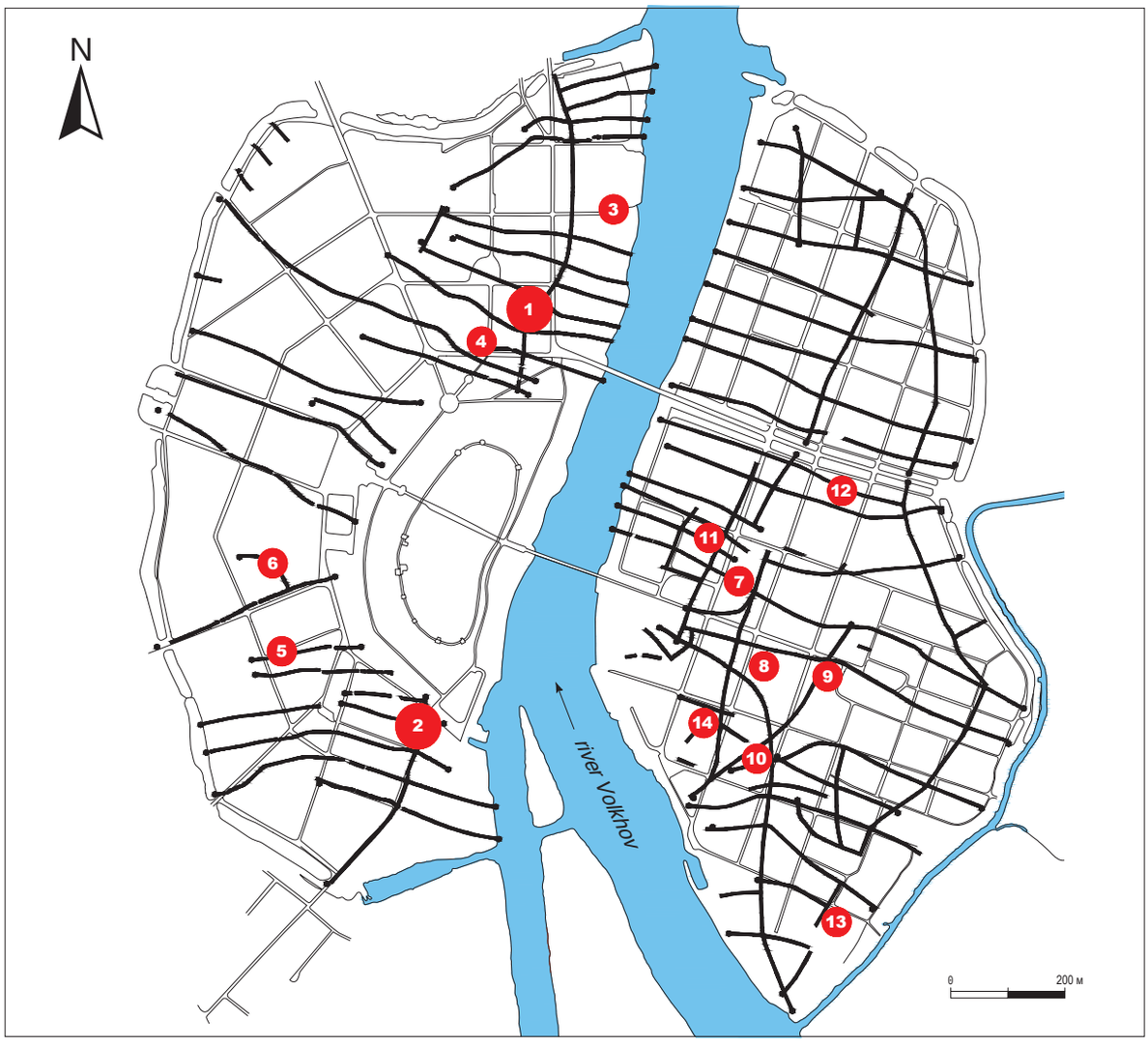


Fig. 4. Topography and excavation sites of the amulets made of bear fangs and other teeth. 1: Nerevskij; 2: Troickij; 3: Dmitrievskij; 4: Tichvinskij; 5: Desjatinnyj; 6: Michajlo-Archangel'skij; 7: Rogatickij III; 8: Slavenskij; 9: Il'inskij; 10: Nutnyj; 11: Ljubjanickij; 12: Fëdorovskij; 13: Posol'skij (1999); 14: Michajlovskij (graphics E. A. Tianina, based on excavation plan from the archives of the Novgorod archaeological expedition).

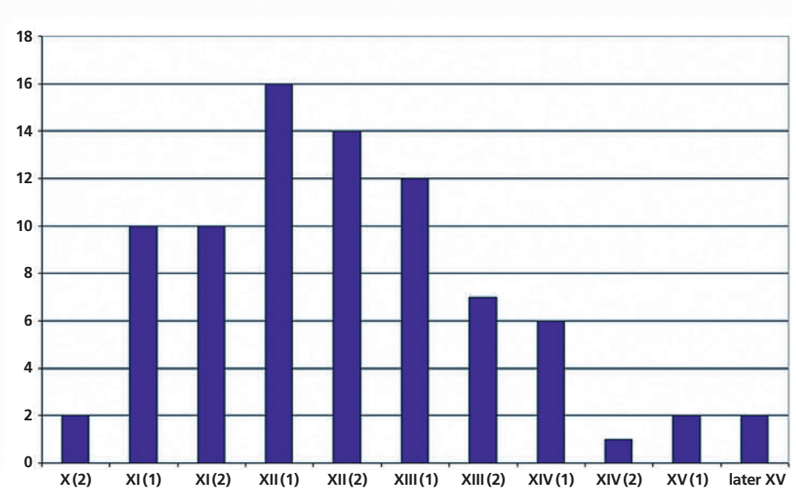


Fig. 5. Chronology of bear amulets in the cultural layers of medieval Novgorod from the 10th to 15th centuries (1 = first half of century; 2 = second half of century).

Evidence of bear remains in a cremation burial in the Moscow region (Burial 5, Kremenye burial ground on the upper river Oka, 12th century)

By Alexander S. Syrovatko, Natalia Svirkina and Liudmila Plekhanova

Keywords: Russia, Middle Ages, Viatichi, cremation, bear claws, analysis of keratinolytics

Abstract: The article presents the materials from Burial 5 at the Kremenye burial ground (Russia, Moscow Region, on the left bank of the river Oka). The burial ground consists of two parts: mounds with inhumation burials and cremation burials near the old surface level. All burials date back to the 12th century. Burial 5 is distinguished by an unusual ring structure and bear claws found among the human bones. The discovery of bear remains is exceptional for the central European part of Russia. An analysis of keratinolytic microorganisms revealed traces of skin, fur, and/or wool in different parts of the burial's ring structure.

Introduction

The burial that we present in this article is not typical for central European Russia. Everything about it is unusual: the burial rite used, its age, geographical origin and archaeological context, and even the burial construction itself.

Why is the burial rite unusual? It is a cremation burial. Such burial sites have only been found in central European Russia within the last 30 years, and there are still less than ten such sites known to us (Syrovatko et al. 2012; Syrovatko 2014). At present, all known cemeteries have been dated back to the interval between the 5th and 12th centuries.

Why is the dating unusual? The burial has, along with the whole cemetery, been dated back to the 12th century, or probably even later, and this period has been comprehensively studied archaeologically. It is considered that the Moscow region was, at that time, inhabited by the Slavic tribe of the Viatichi (modern Moscow, Kaluga, Ryazan, and Tula Oblast), whose burial rite was inhumation (Sedov 1982). The study of these monuments began in the middle of the 19th century, but, by the middle of the 20th century, interest had almost been lost. The finding of the cemetery, with its cremations of such a late date, was so totally unexpected that the discoverers had to make a considerable effort to present their views convincingly to the rest of the scientific society.

Why is the archaeological context unusual? The cremation burials (15 of them had been studied by 2019) were surrounded by the usual Viatichi inhumation mounds. So, the unusual cemetery was integrated within the grounds of the more conventional type, and both cemeteries were used at the same time. For the Old Rus epoch (in other words, the Pre-Mongolian Rus), such a combination is extremely unusual.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 639–650 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134354

What is the peculiarity of the burial construction? Each recently found cemetery containing cremation burials is unique in its own way. The common feature is that the funeral pyre was located somewhere else, and the remains were brought to the cemetery after the cremation. At the same time, the burial rite inside each cemetery was variable, and cremated remains were located near the ancient surface in shallow pits, which are barely discernable; urns were used only rarely. In one case – Burial 5, which is considered here – a ring structure has been recorded, and it is likely that such construction remains had previously been overlooked (see below). One more peculiarity of this burial is represented by the cremated bear claws, which were found together with human bones. Bear claws in a cremation burial are also unique and have not been found before in the Moscow region of Russia, or in Russia as a whole.

Materials and methods

The burial was found in the Kremenye cemetery in 2017. The cemetery is situated on the left bank of the river Oka in Moscow Oblast, not far from the town of Stupino (Fig. 1). The cemetery (Fig. 2) has long been known in archaeological literature for the excavation of six mounds with inhumation burials by V. A. Gorodtsov in the summer of 1927 (Gorodtsov 1928, 20–22). The excavation materials were also presented in the first student publication of the later academician B. A. Rybakov (Rybakov 1928; for more details on the history of research: Syrovatko et al. 2019). During the Soviet period, the mounds were robbed. In 2010, there was a fierce fire, which destroyed the forest that covered the cemetery. Furthermore, the area was ploughed in order to make way for a pine plantation (Fig. 3). During ploughing, cremations close to the surface were damaged, and the museum employee of Stupino town, E. Fomchenko, identified calcinated bones in the spoil heaps. When we arrived on location, we found artefacts from the 12th century together with the remains of cremation burials, which caused some consternation. From 2015, the site has been properly excavated, and, over the following four years, 15 cremation burials situated close to the surface and one barrow with an inhumation grave were found (Syrovatko/Fomchenko 2015; Syrovatko et al. 2019). The majority of inhumation burials were situated either close to the ancient surface, or in shallow pits right beneath the turf. In some cases, along with the main cluster of bones, there was a small pit with a black coal-like filling and a small number of bones (Fig. 3). Burial 7 stood out from the others with its location in the ditch of a burial mound; Burial 5 differed with its ring structure found beneath the bones.

Burial 5: archaeology

The burial is a flat deposit of bones in a layer of the black coal-like sand of approximately 1.9 x 1.7 m in size, but the core of the cluster was approximately 1 m in diameter (Fig. 4). In the 3D-model of the bone "cloud", built with data measured with a total station, it can be seen that some bones are situated in the upper part of the ring structure – a groove (Fig. 5). It became visible only after the bones had been removed and the surface of the subsoil had been cleaned out.

This groove had, in plan, a shape close to a circle, and it was approximately 0.9 x 1.0 m in size. The width of the groove ranged from 15 to 25 cm, and the depth from the surface ranged from 22 to 25 cm (Fig. 6a–c). The top of its filling is the same black coal-like sand into which the calcinated bones probably sank after the decomposition of the construction, which was made from an organic material (?). A part of the filling, at the bottom and along the external rim in the eastern side, was yellow-brown sand that was almost indistinguishable from the surrounding earth (Fig. 6b–d). This part of the construction was less reliable in its details. It hardly differed in colour from the surrounding area, and

thus it could not be shown precisely in the drawing. In addition to the core burials in this cemetery, a small "additional" pit with a dark coal-like filling, 33 x 38 cm in size and 11–12 cm (Fig. 2) deep, was identified in the immediate vicinity of the "main" cluster.

There is a considerable number of finds in this burial when compared with the others (Fig. 6d). However, as with Burial 1, the majority of finds are indistinguishable fragments of copper alloy (15 pieces: Fig. 6d № 12–15, 18–19, 21–22, 24, 29, 30); one item can be interpreted as a small bell that was badly damaged by fire (Fig. 6d № 4). There were only two complete objects, a small cast bell with a slot (Fig. 6d № 20) and a bimetal buckle (Fig. 6d № 16). Four more objects were found in close vicinity to the bone cluster (up to two metres apart) and might be connected with it: fragments of a twisted bracelet, a neck-ring, and a small cast bell, plus indistinguishable items made of iron and copper alloy.

Thus, Burial 5 does not include artefacts with a narrow dating span. However, these artefacts do not contradict the dating of the cemetery near ground level in general. The most typical items that date the period of the cemetery's use are bipyramidal cornelian beads and bronze jewellery, characteristic for the 12th and the first half of the 13th century. These finds from the mounds indicate the simultaneity of both parts of the cemetery (inhumation burials in mounds, and cremated ones near ground level). The mound that contained Burial 7 in its ditch might, according to clothes' remains from a female inhumation grave, be dated to the time span of 1125–1150. Therefore, Burial 7, next to Burial 5, is not younger than that time period (for more detail on the dating of the whole cemetery: Syrovatko/Kleshchenko 2017; Syrovatko et al. 2019).

Burial 5: osteology

The total weight of the cremated remains from the burial is 1,340 g. The size of the fragments ranges from 5 cm to less than 0.5 cm; the average size is approximately 1–2 cm. There are different types of fractures on the fragments of the bones; and the colour of the bones is not homogeneous (from white to black), a light grey colour dominates. A significant number of the fragments are covered with coal dust. For the majority of bone fragments no further identification – species or skeletal part – is possible. Among the identifiable fragments there are bones of at least one human and one animal. The human remains originate from various segments of an adult male (?) individual of more than 30 years of age. Most informative for the determination of sex and age-at-death are fragments of the frontal bone (*margo supraorbitalis*), epiphyses of the phalanges, the humerus, and the fibula. It is worth noting that among the unidentifiable bones a glass fragment has been found. The remains from the "additional" groove have a weight of 28 g; all these remains, covered with coal dust and less than 2 cm in size, are unidentifiable. The colour of these fragments is homogeneous (light grey-white).

In addition, five distal (claw) phalanges of a bear were recorded (Fig. 7). It should be stressed here that some skeletal fragments, supposedly of an animal, could not be identified any further. The animal bones make Burial 5 stand out from the others in the Kremenye cemetery, and among other central European Russian cemeteries with cremation burials in general.

It is obvious that only a small number of human and animal bones were deposited in the burial. This is a common practice in cremations as they are known along the river Oka (Syrovatko 2014). Almost the only exception is Burial 46 in the Shchurovo cemetery, in which the total weight of the bones is 9 kg (Kleshchenko/Syrovatko 2014; Svirkina/Syrovatko 2016).

Our experience in working with medieval cremation burials from the Moscow region shows that only a selection of the bones from the funeral pyre was chosen for the burial itself at a different site, and, in such cases, the bones of animals were heavier and better preserved than those of humans. In the present case, human bones prevail, but this is no proof that there was only a small part of the bear carcass on the funeral pyre.

Burial 5: soil analysis

Dealing with such an unusual phenomenon, our team made an effort to find out whether the ring grooves were part of the enclosure or the grave construction. Burial 5 was the first case in which we applied methods of soil science to find the remains that filled the ring construction. To specify the soils of the location, data was extracted from material of a kurgan in close proximity to the cremated burial (cf. Figs. 2–3). This mound is c. 800 years old, as is the case with the cremated burial, when the beginning of mound-building at "zero-point" is taken into account (Targulian/Sokolov 1978).[1] In other words, all the natural processes that took place in this area were similar both for the soil of the mound and the cremated burial. So, it is possible to make comparisons by including the characteristics of the microbial communities.

The analysis of soil samples from the neighbouring kurgan and the ring groove of Burial 5, using the usual methods (Arinushkina 1970), has led to the identification of values of soil magnetic susceptibility, granulometric composition, humidity, and complete cation exchange capacity, humus, and mobile phosphates. Total and mineral phosphates were identified after Saunders/Williams (1955), and phosphatase activity in comparison with soils of other zones (Kashirskaya et al. 2020). In addition, the characteristics of microbial communities, namely soil respiration, basal and substrate-induced (Anderson/Domsch 1980), and also the keratinolytic (Kashirskaya et al. 2018a; b) and cellulose-decomposition (Plekhanova et al. 2020) activity of the soil and subsoils were recorded.

The method of identification of decomposed animal material in old soil (from the Bronze Age to the Middle Ages), which contains keratin (from skin, fur, and/or wool), follows Kashirskaya et al. (2018a; b). It should be noted that the laboratory had not been informed beforehand of the existence of bear claws in the grave.

Discussion

As we have already noticed, this burial significantly differs from the others on site, both in methods of funerary construction and in the composition of the bones. In the other cremation burials, such ring structures have never been found. The only exception might be Burial 11 from the same cemetery (unpublished). Probably, there was a similar ring structure, although less clearly executed (the filling is light, which made it difficult to identify in the sand layer, and the size was much smaller, no more than 0.4 m). At the same time, ring enclosures are known in funeral constructions in this area: earlier "barrows with enclosures in the mound", or the "small houses of the dead",[2] dating to the 6th–7th centuries, have been found in Shchurovo cemetery (Syrovatko et al. 2012). Later, ring structures appeared in Old Russian barrows, including those of the Viatichi (Sedov 1982; Sedova 1997). The youngest example is the barrow from the Kremenye cemetery that was examined by our expedition. All these constructions were inside the mounds and were much larger in size. It is likely that the constructions at the Shchurovo cemetery originally contained the remains of the funeral pyre, along with the subsoil taken from the ditch. Built of wood, with a diameter of 5–7 m and surrounded by a ditch, they looked exactly like "small houses". In any case, the listed examples are not identical with

1 "Zero-point" is a term taken from the theory of soil formation, as suggested by Targulian/Sokolov 1978. It defines the starting point of soil formation on bare subsurface rock. The start of forming humic acids is always connected with the colonisation of the subsurface rock by the biota.

2 "The houses of the dead" is a colloquial term, widely used in Russian archaeological literature for burial structures of various archeological cultures in forest areas. It refers to small above-ground constructions that look like houses, with inhumation or cremation burials inside.

the construction from Burial 5 near the surface; the mound and the ditches around the burial were absent.

Soil analysis has been applied for the first time for the given burials; thus, there is no comparison. However, the soils can be compared to one another. According to granulometry, their composition is identical (Petrosyan et al. 2019).

Also, the characteristics of the respiration of the microbial communities in the soils and the carbon content have been recorded. Most interesting is a conclusion arrived at by comparing the respiration activity of microbial communities (active microbial biomass the respiration of which has been recorded) and the carbon content: The sample from the eastern part of the ring groove reflects a low number of microorganisms, but the largest amount of humus (organic residues) in the groove. Such a ratio might be interpreted as "exposure to stress" for the active parts of the microorganisms; it also attests to a low threshold boundary of the "stress" for the cohesive sandy soils of that zone. This conclusion calls for additional studies and better statistical evidence, but it shows that it is possible to presume the addition of this organic substance into this sector of the groove.

The second, and probably the most important, aspect is the existence of two sectors with the highest keratinolytic values in the ring groove, which might reflect the addition of materials of animal origin, namely skin and fur, and/or wool, into the soil (Petrosyan et al. 2018).

Is there an analogy in using a bear in the cremation rite? Obviously, there are a lot of them in Fennoscandia and northern Europe on a wider scale (see several contributions, this volume; Kirkinen 2017; Simniškytė 2018, 148). It would be more relevant to provide analogies from the geographically close area, the centre or the south of the European part of Russia, but none are known to the authors at present. We can only comment on the discussion in Russian archaeology on the use and origin of the clay amulets in the shape of bear claws (or beavers?) in the barrows at Yaroslavl (282 km to the northeast from Moscow) and Vladimir (176 km to the east of Moscow) and on the Åland Islands (Golubeva 1987, 77; for the latter see also Gustavsson/Ljungkvist, this volume).

Conclusion

The Kremenye cemetery represents a unique site for the whole of central European Russia. In particular, this relates to Burial 5 containing the remains of a bear. Such circumstances may raise the self-esteem of the researcher(s) of this site, but obviously they have little from which to draw any conclusions.

Firstly, it is still unclear how to interpret this cemetery with its archaic 12th century rite. It might be the continuation of the traditions of the autochthonous population (as opposed to the Slavs), who left behind earlier cemeteries with cremations in this region: Sokolova Pustyn' 1–2 (5th–6th and 11th centuries: cf. Potemkina et al. 2013; Syrovatko et al. 2015b), Shchurovo (6th–7th and 9th–10th centuries; cf. Syrovatko et al. 2015a), Luzhki E (11th century; cf. Syrovatko et al. 2013). Any cultural and ethnic attribution of this population is impossible (it also might have been heterogeneous). On the one hand, the Kremenye cemetery and the others share the funeral rite and geographical proximity. On the other hand, clear differences in funeral rite are noticeable. For example, cremated animal bones are absent in Kremenye, apart from Burial 5; all the graves contain the remains of only one human individual, whereas in other cemeteries there might be more. There is no real evidence for continuity; the population who used the cemetery might not have been related to previous communities. Moreover, the cemetery looks unusual only for central European Russia: to the north, in the Baltic region, the cremation ritual continued to exist for a long period of time (Velius 2016; Simniškytė 2018).

Secondly, the fragmented state of burials all in all does not allow the argument that there were no bear bones and claws in other cremations. Even if they did not exist in all 14 burials – apart from

Burial 5 – in Kremenye, one cannot exclude it for earlier cemeteries. In this respect, the availability of professional archaeozoologists who are capable of working with cremated bones is a problem. Collections have been mostly analysed by anthropologists, but the detailed identification of (cremated) animal bones is beyond their competence.

So, Burial 5 at Kremenye might be explained in different ways, and it cannot be excluded that the quite distant analogies from Fennoscandia and the Baltic region are relevant in this case.

Acknowledgements

This research has been conducted with financial support of the RFBR (Russian Federation for Basic Research), project no. 17-06-00326: "The inhabitance of the left bank of the river Oka in the 'dark times' (8th–10th c.) in the context of the river valley landscapes' dynamics in the late Holocene".

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Fig. 1. Location of the Kremenye burial ground, Moscow region (map GIS department, ZBSA).

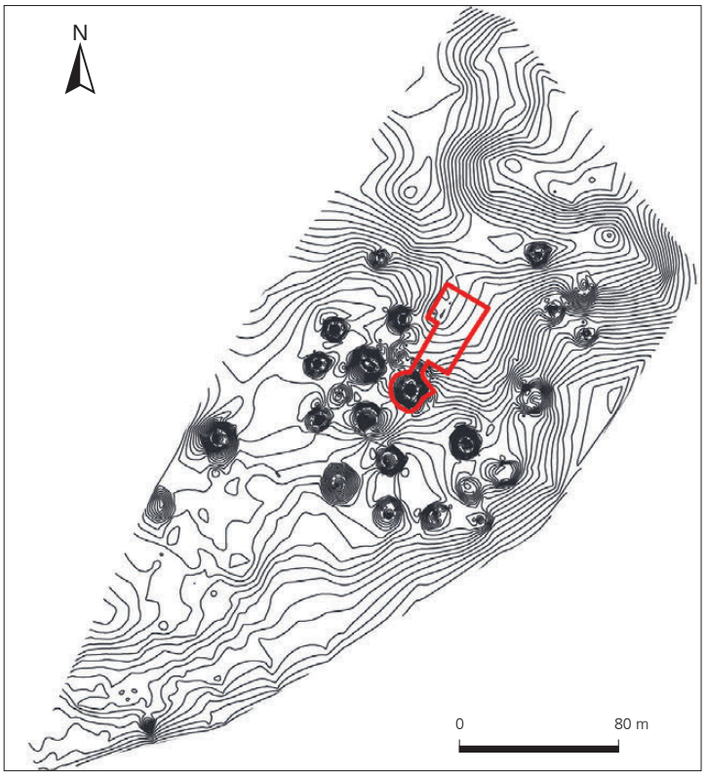


Fig. 2. Plan of Kremenye cemetery, topographic survey of 2016. The red contour line indicates the area of excavations conducted in 2015–2017 (graphics A. Syrovatko).

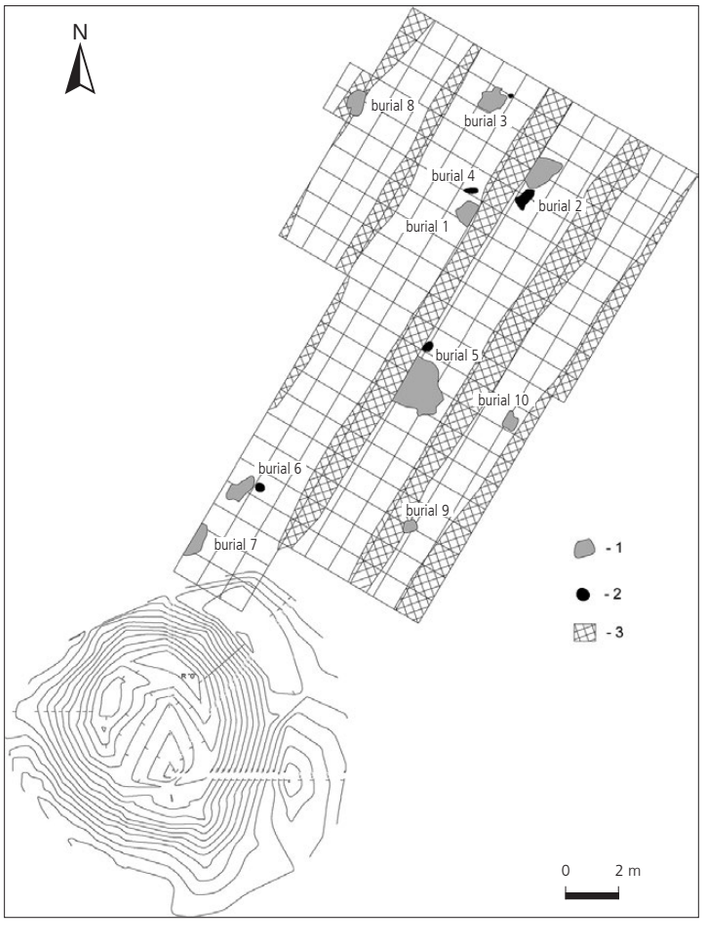


Fig. 3. Excavation plan. 1: Bone clusters; 2: Pits with dark filling near the burial; 3: Planting beds for pine plantation (graphics A. Syrovatko).



Fig. 4. General view of Burial 5 after turf removal (photo A. Syrovatko).

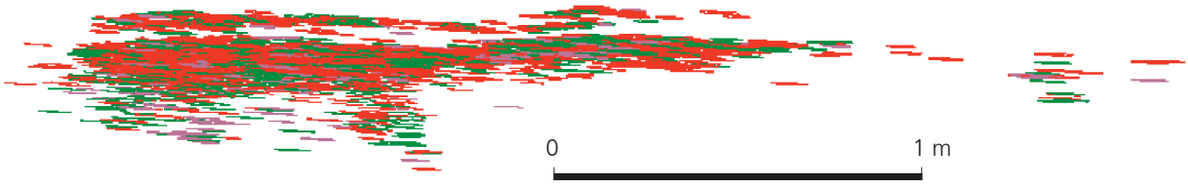


Fig. 5. 3D-model of bone "cloud", view from the southeast. Bones/bone fragments shown in red are less than 1 cm in size, bones in green are 1–2 cm in size, bones in purple are larger than 2 cm (graphics A. Syrovatko).

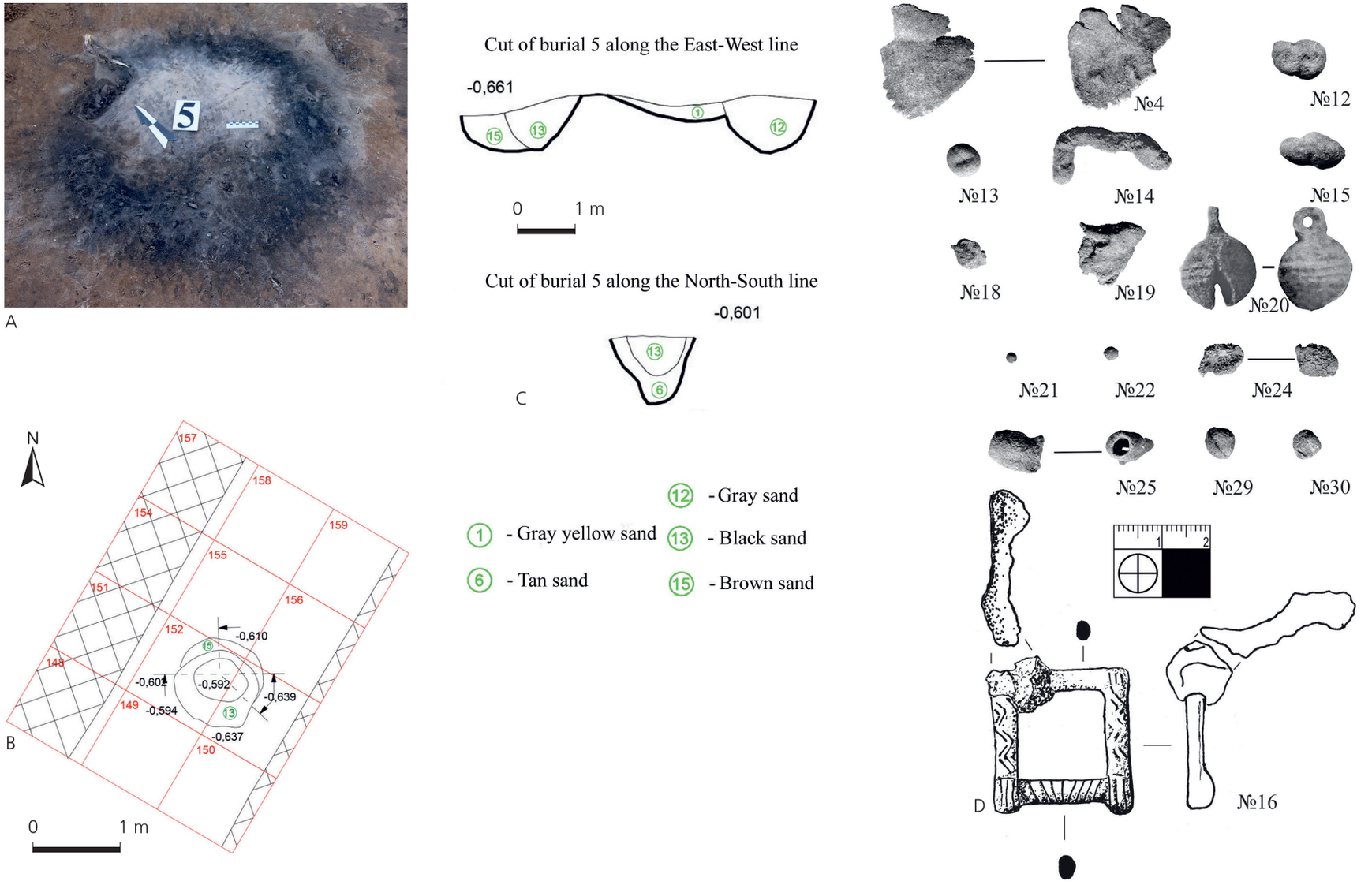


Fig. 6. Burial 5; a: Photo of the ring structure under the burial; b: Plan of the ring structure; c: Cross-section view of the ring structure; d: Burial goods. Numbers of burial goods correspond to field records (graphics A. Syrovatko).



Fig. 7. Kremenye, Burial 5. Claw phalanges of bear paws (photo N. Svirkina).

Bears in the history of religion (northern Europe)



Do these four images have an ordered thematic progression that shows the steps of an initiation sequence? The 7th-century helmet-plate dies from Björnhovda, Torslunda (Öland). Top left to bottom right: Man between bears; Man with axe holding a roped animal; Warriors carrying spears; Dancing man with horned head-dress and man with spear wearing a wolfskin (see Sundqvist *and other texts, this volume; image © Statens Historiska Museer, Sweden, inv. no. SHM 4325).*

Bears in Old Norse religion with specific references to the *berserkir*

By Olof Sundqvist

Keywords: berserkir, *animal-warriors, Óðinn, initiation, shapeshifting,* berserksgangr

Abstract: The notion that bear symbolism and religion played a crucial role in the warrior-band of berserkir *during the Late Iron Age (*c. *AD 550–1050/1100) in Scandinavia has, for a long time, been accepted in the research on Old Norse religion. However, it has recently been challenged by philologists and archaeologists. In what follows, this issue will be discussed by means of an interdisciplinary method, by which all available sources related to Old Norse religion will be taken into account. A special focus will be placed on the function of bears in relation to initiation,* berserksgangr, *and shapeshifting. Finally, the connection between bears,* berserkir, *and the worship of Óðinn will be examined. The etymology of the word* berserkir *and the factual existence of these animal-warriors will also be taken into consideration.*

Introduction

Bears are important in the religious worlds of indigenous Nordic people, for instance, those found in the Saami and Finnish traditions. However, they do not play a prominent role in the preserved Old Norse mythology. Compared to other animals, such as ravens, eagles, and wolves, they have a subordinated role here (cf. Jesch 2002). Nevertheless, previous research has regarded bears as sacred animals in Germanic religion. Jan de Vries states in his classical "Altgermanische Religionsgeschichte" (De Vries 1956/1957, §257): "Eine sehr wichtige Rolle hat der *Bär* im Kult gespielt" ("The *bear* played a very important role in cultic practice"). The sacredness of the bear, he argues, is reflected through its denominations in the Germanic languages. Cognates to the Old Norse *bjǫrn* (e.g. Old English *beorn* and the Old High German *bero*, from the Proto-Germanic **bernu*) are all derived from an old *noa*-designation, meaning "the brown one" (cf. De Vries 1961, 40–41; cf. Nedoma, Saerheim, and Udolph, all in the present volume). The Indo-European appellation of the animal – a term equivalent to the Greek *arktos* or the Latin *ursus* – is lacking in the Germanic languages. It may be no more than coincidence, but it might also be a consequence of a taboo related to the real name. In more recent research, scholars have argued that bears could have played a specific role in two religious contexts that sometimes converge; one that refers to human-bear sexual relations and genealogy, and one that is related to the religio-martial groups called *berserkir,* which probably meant "the bear-shirts" (e.g. Edsman 1994, 82–88; Tolley 2009, 563–580; DuBois 2012, 86–90; see Nedoma, this volume). For the former discourse, popular traditions with erotic undertones are often referred to, where a bear marries a woman. The offspring of such a marriage was a man-bear. For the

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 655–676 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134355

latter discourse, Old Norse traditions about *berserkir* are mentioned. They were closely linked to the warriors called *ulfheðnar*, "wolf-skin-wearers", who took the role of predators in action. In *Vatnsdœla saga* (chap. 9, 24; *The Saga of the People of Vatnsdal*, chap. 9, 202) it is stated:

> *Þeir berserkir, er ulfheðnar váru kallaðir, þeir hǫfðu vargstakka fyrir brynjur ok vǫrðu framstafn á konungs skipinu […].*
>
> Those *berserkir*, known as *ulfheðnar* – they used wolf-skin cloaks for corslets and defended the bow of the king's ship.

These elite warriors constituted some sort of warrior sodalities into which religious elements were also integrated. In what follows, I will mainly focus on the connection between bears and the *berserkir* and its significance for the Old Norse religion. The concept of Old Norse religion refers to the religion of the Germanic speaking people living in Late Iron Age Scandinavia (*c.* AD 550–1050/1100). This religion perished when Christianity became dominant around the 11th century.

Sources and source criticism

An inquiry into the significance of bears in the context of the *berserkir* reveals serious problems with the source criticism. The *berserkir* are indeed mentioned in skaldic poetry dating back to the Viking Age (*c.* AD 750–1050/1100). These poems may be considered as primary sources, since they describe these warriors and the Old Norse religion from an insider's perspective, i.e. they were composed by persons who lived with the old world-view during the Viking Age. A connection between *berserkir* and *ulfheðnar* can be found in the earliest known text about them in Old Norse, i.e. the poem *Haraldskvæði.* It was composed by the skald Þórbjǫrn hornklofi *c.* 900, but the lay is only preserved in form of quotations in medieval manuscripts. This poem, also called *Hrafnsmál*, is formed as a dialogue between a *valkyrja* (i.e. a female mythical being; literary "the one who chooses the slain"), and a raven (see stanzas 1–2), where the former poses questions and the latter replies (see the stanzas 3, 15, 18, 20, and 22). The *berserkir* and the *ulfheðnar* are here mentioned to have supported King Haraldr hárfagri at the battle of Hafrsfjǫrðr in Norway *c.* 870 (Fig. 1). It seems, according to this poem, as if these warriors were possessed by an ecstatic rage, including bestial power, during the battle as the *berserkir* were bellowing (*grenja*), and the *ulfheðnar* were howling (*emja*; st. 8; *Haraldskvæði;* text and transl. *SkP I*, 102–103):

> *Grenjuðu berserkir; guðr vas þeim á sinnum;*
> *emjuðu ulfheðnar ok ísǫrn dúðu.*
>
> Berserks (*berserkir*) bellowed; battle was under way for them; wolf-skins (*ulfheðnar*) howled and brandished iron spears.

The Old Norse verb *grenja* "to bellow"[1] is attested in connection to the sound of bears in other texts, for instance, the *Grettis saga* (74–75; author's translation):

1 Heggstad et al. 2012 translate *grenja* as "brøle, kneggje med dirrande lyd, ule" ("roar, crackle with trembling sound, howl").

Lá bjǫrninn í híðinu á daginn, en leitaði á brott jafnan, er náttaði […] Þat var eina nótt, at Bjǫrn fór til híðsins; hann varð varr við, at dýrit var þar fyrir ok grenjaði illiga.

The bear dwelled during the day in the pit, but left it when the night fell on […] One night Bjǫrn went to that pit; he noticed that the animal [the bear] was there, since it bellowed angrily.

However, this verb, and the Old Norse verb *emja,* are usually related to the sounds of dogs and wolves.[2] In stanza 21 of *Haraldskvæði*, the raven states that these warriors "hack at shields", which refers to the ecstatic and bestial character of them in action. The raven also mentions that the king entrusts himself to men of courage alone, indicating that the *berserkir* were perceived as his bodyguard or elite troops (text and transl. *SkP I*, 114–115):

"Ulfheðnar heita, þeir es í orrostu
blóðgar randir bera;
vigrar rjóða, es til vígs koma;
þeim es þar sist saman.
Áræðismǫnnum einum, hygg ek, þar undir felisk
skyli sá inn skilvísi, þeim es í skjǫld hǫggva."

"They are called wolf-skins, who bear bloody shields in combat; they redden spears when they come to war; there [at Haraldr's court] they are seated together. There, I believe, he, the sovereign wise in understanding, may entrust himself to men of courage alone, those who hew into a shield."

In stanza 20 the *valkyrja* asks further about *berserkir* (text and transl. *SkP I*, 113–114):

"At berserkja reiðu vil ek þik spyrja, bergir hræsævar:
hversu es fengit, þeim es í folk vaða,
vígdjǫrfum verum?"

"I want to ask you about the equipment of berserks [*berserkir*], taster of the corpse-sea [BLOOD > RAVEN]: what provision is made for war-daring men, those who surge into battle?"

It has been argued that the kenning in stanza 20, "taster of the corpse-sea [= blood]", indicates that the *berserkir* really consumed blood like a predator. The archaeologist Neil Price, for instance, translates it "the drinkers of the corpse-sea [blood]" and states: "they [the berserks] are described as drinking blood" (Price 2019, 304; cf. Dale 2014, 136). However, the kenning *bergir hræsævar* ("taster of the corpse-sea"), does not refer to the *berserkir*, which appears in plural (*berserkja* "of berserks") in this stanza. The noun *bergir* "taster" (a nomen agentis of *bergja* "to taste") is in its singular form here, and the kenning *bergir hræsævar* refers to the raven, who is the interlocutor of the *valkyrja* in this poem. She poses here a question to the raven and addresses him/her by means of this kenning. In the poem, we do not get explicit information about the assumed religious context of these warriors, or about any blood-rituals,[3] but it is clear that, in this account, they were symbolised as bears or wolves in battle.[4]

2 In *Vatnsdœla saga* (124) we meet the expression *grenja sem hundr* ("barking like dogs"). In *Grettis saga* (67) *emja* is related to wolves. Heggstad et al. 2012 translate *emja* as "skrike, hyle" ("shriek, howl"); ONP has "yell, cry ?, bellow".

3 This does not exclude that the *berserkir* ritually consumed blood in other contexts, see below.

4 The word *berserkir* is mentioned in a "free-standing" stanza, a so-called *lausavísa* created in the late 10th century by Viga-Styrr Þorgrímsson and quoted in *Eyrbyggja saga*. These *berserkir* were dangerous, according to the stanza. This

Information about the connection between bears, *berserkir*, and religion appears in Old Icelandic prose traditions, such as the Kings' Sagas (e.g. *Ynglinga saga*), the Sagas of Icelanders (e.g. *Grettis saga,* and *Víga-Glúms saga*), and the somewhat problematic Fornaldarsögur (e.g. *Hrólfs saga kraka*). These texts date back to the High Middle Ages, i.e. more than 200–300 years after the Old Norse religion had perished. These sagas are literary reflections of lost oral traditions, which also include later ideas. Hence, they must be considered as secondary sources, i.e. texts written by Christians from an outsider's perspective.

In the Sagas of Icelanders, the *berserkir* often appear as "villains" or "unwelcome suitors" (cf. Blaney 1982). This motif is probably due to later epic developments. In Snorri Sturluson's *Ynglinga saga* (*c.* AD 1230), we get the important information that the *berserkir* were regarded as Óðinn's warriors (see further below). In order to evaluate all these prose texts, other types of sources will be used, such as archaeological, runic, and onomastic materials, which are more contemporary with the Iron Age *berserkir* and also considered as primary sources. However, these types of materials also contain serious problems related to interpretation, since they are mute or fragmentary. In addition to these sources, contemporary classical and ecclesiastic texts written in Latin may contribute with important information on the connection between bears, animal-warriors, and the Old Norse religion, even if these texts must be considered as secondary sources. Important materials are also the medieval laws, written in the vernacular (see Tab. 1 for an overview).

Previous research, methods and aims

Research on *berserkir* has been extensive and it is difficult to survey. Early on, it was argued by Lily Weiser and Otto Höfler that Germanic and Old Norse sources, as well as later folklore traditions, clearly reflected the existence of a particular type of *Männerbünde* (male societies) among the Germanic peoples.[5] For Höfler, these *Männerbünde* represented more or less esoteric organisations (*Geheimbünde* [secret societies]), centred around the god Woden or Óðinn and the cult of the dead (*Totenkult*). This theory can be questioned in many respects (see e.g. Von See 1961; Meier 2001), and it has also been stated that the previously assumed evidence for this phenomenon in Tacitus' *Germania* is doubtful (Lund/Mateeva 1997). Also uncertain is the name *Winnili* (cf. German *winnig* "howling with rage") mentioned in the anonymously written text from the 7th century, *Origo Gentis Langobardorum*. It designates an elite warrior group among the Langobards, but it is not quite clear whether these warriors can be equated with the *berserkir*.[6] Equally problematic for such an interpretation is the Latin term *cynocephali* "men with dog's heads", mentioned by Paul the Deacon in his *Historia Langobardorum* (I,8, 11).[7] Notwithstanding its speculative character, the theory of Weiser and Höfler draws attention to the existence of some sort of cultic warrior groups.

Previously, scholars have thus argued that the *berserkir* were "supernaturally empowered warriors", i.e. that they used religious rites when preparing for battle and thus acted with divine force in war (see most recently Frog 2019; cf. also Nordberg/Wallenstein 2016). This position has been

word also appears in two Eddic poems, *Hárbarðsljóð* and the later *Hyndluljóð*. The former, which may have been composed during the Viking Age, tells that Þórr once fought with female *berserkir* (*brúðir berserkia barðac*) at Hlésey (Læssø). The expression "female *berserkir*" has been interpreted as a poetic expression of "giantesses", indicating that the concept of *berserkir* was regarded as something dangerous. The latter poem just mentions that Óttarr descended from a line of *berserkir*.

5 See Weiser 1927; Höfler 1934. For an overview of research: Schjødt 2008, 49–57.

6 Weiser 1927, 49, 54 interprets *Winnili* as "wütende Hunde" ("furiuos dogs"). For other explanations of the name *Winnili* (cf. **wenn-*) and its connection to the Langobards, see Nedoma 2001.

7 E.g. Kershaw 2000, 142–145. Cf. Höfler 1934, 62–63.

questioned by the philologist Margaret Clunies Ross, who thinks that "there is no unquestionable evidence in the sources to support this view" (Clunies Ross 2019, 298). Archaeologist Egon Wamers has a similar opinion regarding this and states that the relationship between bears, *berserkir*, and an Óðinn-cult has no support in the preserved sources:[8] "Aus der kritischen Analyse der antiken und der nordalpinen Bilddenkmäler mit 'Bärenszenen' und der altgermanischen Überlieferung zu Bären und Berserkern deutet bislang nichts Greifbares auf einen altgermanischen Bärenkult noch auf ein Bärenmasken-Kriegertum/Berserkertum – und erst recht nichts auf ein Odin-Bärenkriegertum. Óðinn/Wotan/Woden gewinnt in diesem Kontext keinerlei Konturen" ("According to the critical analysis of the antique and northern Alpine pictorial monuments with 'bear scenes' and the Old Germanic traditions on bears and berserks, there is nothing tangible indicating an Old Germanic bear cult or bear mask warriorhood/berserkism – and certainly no Odin-bear-warriorhood. Óðinn/Wotan/Woden does not take on any shape at all in this context"; Wamers 2009, 42).

The theory that religion and bear symbolism played a crucial role in the group of *berserkir* has thus been challenged by recent scholars. In what follows, this issue will be discussed by means of an interdisciplinary and comparative method,[9] where all available sources related to Old Norse religion will be taken into account. A special focus is going to be placed on the function of bears in relation to initiation, *berserksgangr*, and shapeshifting. Finally, the connection between bears, *berserkir*, and the worship of Óðinn will be examined. Before entering these issues, the etymology of the word *berserkir* and the factual existence of these animal-warriors will be taken into consideration.

Etymology of *berserkr* and the existence of animal-warriors in the Late Iron Age

There is little dispute about the second element of the compound *berserkr*. The Old Norse appellative *serkr* means "shirt" or "coat of mail". The first element *ber-* is, however, hotly debated, and there are two competing explanations. Some scholars argue that it refers to the adjective *berr* meaning "bar" (e.g. Noreen 1932; cf. Kuhn 1968; Speidel 2002), while others think it is related to an unattested substantive **beri* (**berr* or **ber*; cf. *bera* "she-bear") meaning "bear" (e.g. Fritzner 1954; Cleasby/Vigfusson 1957; De Vries 1961; Von See 1961; Breen 1997; Heggstad et al. 2012; Aðalheiður Guðmundsdóttir 2007; Wamers 2009; Dale 2014). Those who favour the former interpretation, usually take support from a statement in Snorri Sturluson's *Ynglinga saga* chap. 6 (1230), where it says that Óðinn's "men (the *berserkir*) went to battle without coats of mail" (*hans menn fóru brynjulausir*; *Heimskringla I*; *Snorri Sturluson; Snorri Sturluson [transl.]*). However, most scholars prefer the other interpretation. Several arguments have been adduced. The semantic structure and lexical symmetry between the concepts of *ulfheðnar,* which undoubtedly means "wolf-skin-wearers", and *berserkir* supports the idea that the latter term could be interpreted as "bear-shirts".[10] This interpretation is also in harmony with images on warrior-animal amalgamations, such as those on the

8 During the last decades, a great amount of studies has been written on *berserkir* (e.g. Blaney 1972; 1982; Breen 1997; Sundqvist/Hultgård 2004; Näsström 2006; Samson 2011; Kuusela 2012; Dale 2014; Price 2019), but mainly archaeologists have focused more exclusively on the function of bears in these contexts (see e.g. Wamers 2009; Hedeager 2011; Grimm 2013; this volume; Oehrl 2013; however: Ström 1980; Tolley 2009, 563–580; DuBois 2012).

9 By the comparative method, I am referring mainly to what Schjødt (2012, 275–280) calls "comparisons of the second level", i.e. comparisons made between source information from the Late Iron Age Scandinavian area, and its neighbours, such as Germanic tribes to the south. Comparative perspectives have been a hot topic in the discipline history of religions. Nowadays, scholars often defend such perspectives, even if they argue that such an approach should rather be described as a research design and not a single method. Cf. Stausberg 2014.

10 The compound *ulfheðinn* is composed by a first element *úlfr* "wolf" and a second element *heðinn*, meaning "kurzes Kleidungsstück ohne Ärmel, aber mit einer Kapuze von Pelz gemacht" ("a short garment without sleeves, but with a hood made of fur"); De Vries 1961, 215.

7th-century helmet plate dies from Torslunda (Öland), which suggest that warriors wore animal skins, masks, or both (Fig. 2). There we see a spear-carrying warrior with a wolf-head, wolf-skin and tail, but human feet, running or dancing with a one-eyed man to the left. It has been argued that this is a representation of Óðinn (see below). The wolf-skin-wearer is an *ulfheðinn*, who is being led by his god into battle or taking part in a ritual dance with him. This image indirectly supports the idea that the word *berserkr* should be interpreted "bear-shirt". Images from Gutenstein (Austria), Obrigheim (Germany), Sutton Hoo (England), and Källby (Sweden) do the same (Fig. 3).

The iconography and the etymology of the term *ulfheðnar,* and most likely the word *berserkr,* also indicate that this type of warrior really existed during the Iron Age, and that they wore wolf or bear skins in battle or during ritual performances. This idea can be supported by the 10th-century skaldic poem *Háleygjatal* st. 6, which mentions a wolf-skin-warrior (text and transl. *SkP I*, 204):

> *Ok sá halr*
> *at Hôars veðri*
> *hǫsvan serk*
> *Hrísgrísnis bar.*
>
> And that man wore the grey shirt of Hrísgrísnir <wolf> [WOLF-SKIN] in the storm of Hôarr <= Óðinn> [BATTLE].

It is also striking that some of the richest Migration Period weapon-burials, such as Evebø (Norway), Högom mound 2 (Sweden), and Snartemo V (Norway), have yielded bear skins. On the other hand, such skins also appear in rich female burials, such as that of Krosshaug at Tu in Rogaland (Norway). This evidence makes the connection between warriors and bear skins as something typical in rich Iron Age graves uncertain. Archaeologist Oliver Grimm states thus: "Remarkably, probably the richest of all northern European weapon burials of the Migration period (Evebø, Högom mound 2, Snartemo grave V), have yielded bear-skins that either covered or lay under the deceased, and this seems a strong argument in favour of 'bear-warriors' […]. However, there is much counter-evidence, since the earliest northern European inhumation burials with skins were those of women. The Krosshaug 'petty queen' of the Migration period was also quite possibly among the bear-skin burials, and so were other women of that era (for example in Sletten, southern Norway […])" (Grimm 2013, 292).

Other possible evidence for the existence of these predator-warriors are some early dithematic personal names. The theriomorphic elements in these names indicate close links to animal mimesis and costume (see Breen 1997). The personal name *Úlfheðinn* "wolf-skin-wearer" is attested in the Viking Age runic inscriptions **ulueþin** (U 799) and **ulfhiþin** (Sö 307; cf. Peterson 2007, 240). Also, the name *Biarnhǫfði* "bear-head" is evidenced in runic inscriptions dating back to the Viking Age: **biarnhufþi**, **biarnaffþi** and **biarnafþa** (U 1045 and U 1113; Peterson 2007, 42). In addition, the names *Bjarnheðinn* "bear-skin" and *Bjarngrímr* "bear-mask" appear in Old Norse medieval texts (*Landnámabók*, S27, H25, 66, 69; *Flateyjarbók* II, 395; cf. Lind 1905–1915, 135). One problem with these dithematic names is that the first and the second elements could have been combined by coincidence. Nevertheless, we may conclude that the evidence, when all is taken together, indicates that animal-warriors really existed in Late Iron Age society.

Initiation Rites

Certain episodes involving *berserkir* within Old Norse prose describe events that can be interpreted as literary reflections of a lost oral tradition related to memories of initiation rites (e.g. Danielli

1945; Blaney 1972; Schjødt 2008; Dale 2014; Nordberg/Wallenstein 2016). Initiation is a *rite of passage* marking entrance or acceptance into a group or society. In an extended sense, it can also signify a transformation in which the initiate is "reborn" into a new role with a new identity.[11] In the Norse prose accounts, bears and wolves occasionally play a crucial role in such initiation rituals. These high medieval narratives form a general pattern. A boy from a well-established family is placed with his foster-father, who is a warlord. Usually he is dressed in ragged clothing, such as a fur pelt, when arriving at his relative's residence. He is, at first, poorly treated and harassed by members of the retinue. The lad finally becomes the protégé of a senior member of the warband. This warrior takes the boy to a secluded place in the woods. He trains him in military skills and initiates him into secret knowledge. As a test, he has to kill a dangerous enemy, most often a ferocious animal, such as a bear. He must also drink its blood and, by means of this, in some sense incorporate the quality of the predator. He returns to his foster-father and performs a sham battle against a beast. After the ritual killing of the dummy-beast, the warriors and the warlord accept him as a full member of the warband. As a sign of this, he is given a new name and a sword as an insignia.[12]

This pattern is partly attested in the medieval Sagas of Icelanders. In *Víga-Glúms saga* chaps. 2–4, the young Icelander Eyólfr is sent to Norway. First, Eyólfr is treated poorly by his host, since he wears an old fur pelt (*loðkápa*) every day. After killing a bear and cutting off its nose as proof (chap. 9), he becomes a respected man. When he defeats the *berserkr* called Ásgautr in a *hólmganga* (f.), he also receives Ástríðr Vigfússdóttir as his wife (chaps. 11–13). A similar pattern is repeated in chapter 6, when Glúmr, Eyólfr's youngest son, travels to Norway. He is also treated poorly by his relatives until he drives the *berserkr* with the name Bjǫrn "bear" járnhauss away from the hall. He is then accepted and placed in the high-seat, together with his grandfather, Vigfúss. Later, Glúmr also receives three family heirlooms. Vigfúss says: "I will give you a fur, a spear and a sword" (*… vil ek þér gefa, feld ok spjót ok sverð*; *Víga-Glúms saga,* 16–19). According to *Grettis saga* chaps. 18–21, Grettir kills a *berserkr* and a bear in order to prove himself and become an heir to the family (*Grettis saga,* 56–78). Like Glúmr, Grettir also receives a sword after his deeds, thus indicating traces of a ritual pattern.[13]

One of the most important sources attesting to a detailed initiation of animal-warriors, is the account of the *berserkr* Bǫðvarr Bjarki and his protégé, Hǫttr. This narrative is rendered in several prose texts, such as Saxo Grammaticus' *Historia Danorum* (*c.* 1200), *Skáldskaparmál* in *Snorra Edda* (*c.* 1220), *Skjǫldunga saga* (*c.* 1200), and in Olaus Magnus' *Historia de gentibus septentrionalibus* (1555). The tradition is attested early, in the skaldic poem *Bjarkamál* (possibly 10th century; cf. M. Clunies Ross in *SkP III*, 496), and also in later poems, such as *Bjarkarímur* (15th century). The

11 Arnold van Gennep identified three successive and distinct factors in such groups of rites: separation, margin, and aggregation (Van Gennep 1960). Victor Turner proceeded from this framework, but went further and focused on an aspect of these rites that had previously been neglected, i.e. the marginal or liminal period (Turner 1967; 1969). In ritual initiations the neophytes are – during a well-marked liminal period – removed, hidden, without rank or insignia, etc. "The subject of passage ritual is, in the liminal period, structurally, if not physically, 'invisible'" (Turner 1967, 95). He/she is "betwixt and between", neither here nor there. The neophyte is thus regarded as symbolically dead. He/she is leaving his/her former being and identity, but he/she has yet not achieved what he/she will become. Only after the "exhibitions", "actions", and "instructions" (of the "knowledge"), i.e. the ritual actions that comprised the initiation, can he/she become what he/she is going to be.

12 On this pattern, see e.g. Weiser 1927, 80–82; Höfler 1934, 190–201; Danielli 1945, 229–245; Blaney 1972, 64–129; Schjødt 2008, 271–327, 352–355; Nordberg/Wallenstein 2016, 53–54.

13 Well-known is the account of Sigmundr and his son Sinfjǫtli in the late *Vǫlsunga saga* chaps. 6–8 (14th or 15th century). Scholars have argued that this story reflects an ancient initiation ritual (e.g. Weisser 1927, 70–71; Höfler 1934, 190–219; Schjødt 2008, 299–312). Sinfjǫtli is tested in several different ways. During a liminal phase, he learns the ideals of warriors. Both father and son are disguised as wolves during that period, speaking wolfish language. The boy also "dies" in a symbolic manner, after killing eleven warriors. He is rescued by his father (symbolically reborn) by supernatural means. After that he can remove his wolf dress and become a real warrior.

most extensive version is found in the fornaldarsaga *Hrólfs saga kraka*, which is a late literary product from the 14th or 15th century. The pattern of initiation is not so prominent in the account of the protagonist Bǫðvarr himself. Indeed, he is one of King Hrólfr's *berserkir* (see *Hrólfs saga kraka* 26–37).[14] He is also perceived as a man-bear, since he is son of a woman and a bear (*Hrólfs saga kraka* 26–27). This is indicated by his nickname *bjarki*, which means "the little-bear" (Falk 1924, 4–5; Heggstad et al. 2012, 73). This name reflects genealogic aspects, and possibly "initiatory" functions as well. It could have been given to him under his initiation, but it might also refer to his role as an initiatory tutor when he was teaching Hǫttr how to kill a bear. In addition, the name *bjarki* might be related to his role as a shapeshifter (see below).

Aspects of initiation are more clearly attested in connection to Bǫðvarr Bjarki's protégé, Hǫttr (cf. Schjødt 2008, 322–326). *Hrólfs saga kraka* reports that the young boy leaves his home and arrives at King Hrólfr kraki's hall. There he is ignored, mistreated, and insulted by the retainers of Hrólfr. Finally, he acquires a tutor, Bǫðvarr, who takes him into the wood and teaches him how to kill a beast. After drinking its blood and eating its heart, Hǫttr returns to Hrólfr's court, where he performs a sham battle and kills the dummy beast. He is then accepted into the group as a warrior. Since Saxo, in his much-abbreviated version of this account, states that Bǫðvarr Bjarki's (Latin *Biarco*'s) training and killing involved a bear (Latin *ursus*), it becomes possible to associate this ritual with an initiation into the band of *berserkir*. Saxo states thus (*Saxo Grammaticus*, 2.6.11):

> *Vrsum quippe eximie magnitudinis obuium sibi inter dumeta factum iaculo cinfecit comitemque suum Hialtonem, quo uiribus maioreuaderet, applicato ore egestum bellue cruorem haurire iussit.Creditum nanque erat hoc potionis genere corporei roboris incrementa prestari.*
>
> When a giant bear met him [Biarco] among the thickets he dispatched it with his javelin and then told Hialti [Hǫttr], his comrade, to apply his mouth and suck out the beast's blood so that he might achieve greater strength. It was believed that this type of drink afforded an increased bodily vigor.

Hǫttr's blood-drinking ceremony, which also is depicted in Olaus Magnus' Book 5 of his *Historia de gentibus septentrionalibus*, chap. 15 (Fig. 4), indicates an initiation. In this ritual, the bear symbolism plays a particular role, since the drinking of the bear's blood leads to physical strength and courage.[15] When Hǫttr finally, according to *Hrólfs saga kraka*, receives his new name, Hjalti, and a sword, all doubts are expelled. By means of this rite, Hjalti has included bear features in his personality, which was a prerequisite for being one of the *berserkir*.[16]

One problem when trying to reconstruct the historical background of the initiation of *berserkir* is the late dating of the extensive written sources, which are supposed to substantiate this theory. This type of initiation has, however, also been linked to the iconography of the four Torslunda helmet

14 The *berserkir* are often in this text designated as *kappar* "fighters" (m. pl).

15 In fact, blood has been recharged and surrounded by rites even in peasant communities well into the Christian era. Lid 1924 investigated slaughter customs in folkloric material from Norway and its neighboring countries. It was still customary in the 18th century to drink the blood of slaughtered animals, which was considered as nourishing and energy-providing. This was mainly done in connection with hunting, but also during the slaughter of domesticated animals.

16 The three phases of a *rite de passage* can thus be identified in this story: *a separation phase* – when Hǫttr leaves the hall and his former identity symbolically dissolves; *a liminal or transition phase* – when Hǫttr goes to the woods with his master and obtains his strength and courage by drinking blood and eating the beast's heart, where he also acquires the qualification to be a warrior, and, finally, *an incorporation phase* – when Hǫttr displays his new skills by symbolically killing the beast, he also receives a weapon and a new name. Hǫttr's social status and identity have now changed and this is irreversible. See e.g. Danielli 1945; Dumézil 1973, 69–71; Blaney 1972, 102–110; Schjødt 2008, 322–326.

plate dies. Heinrich Beck (Beck 1968) and, more recently, Roderick Thomas Duncan Dale (Dale 2014, 103–106) have identified an ordered thematic progression in them, which was related to an initiation sequence. They argue that the first two matrices show how the warrior proves himself against two bears and a monster. The third matrix is about the warrior standing in a shield-wall in a position indicating that the members in the war-band now can rely on him. In the fourth, the warrior is running or dancing as an *ulfheðinn*, together with his god Óðinn.[17] Whether Beck's and Dale's arguments can be considered valid will be left open in the present investigation. However, it should be mentioned that parts of the initiation pattern attested in the medieval prose texts also have support in much older classical sources that refer to Germanic tribes in continental Europe, especially the test of the novice's courage and manliness. Tacitus reports in his *Germania* (*c.* AD 98) that the young Chatti warriors could not cut their hair (i.e. complete their initiation) until they had slain an enemy (*Tacitus*, chap. 31):

> *Et aliis Germanorum populis usurpatum raro et privata cuiusque audentia apud Chattos in consensum vertit, ut primum adoleverint, crinem barbamque submittere, nec nisi hoste caeso exuere votivum obligatumque virtuti oris habitum. Super sanguinem et spolia revelant frontem, seque tum demum pretia nascendi rettulisse dignosque patria ac parentibus ferunt: ignavis et imbellibus manet squalor.*
>
> The ceremony, practiced by other German peoples only occasionally, and by individual hardihood, has with the Chatti become convention, to let the hair and beard grow when a youth has attained manhood, and to put off the facial garb vowed and held as due to manliness only after an enemy has been slain: standing above the sanguinary spoil, they remove the face's cover, and advertise that then and not before have they paid the price of their birth-pangs, and are worthy of their kin and country. Cowards and weaklings remain unkempt.

A. A. Lund and A. S. Mateeva (Lund/Mateeva 1997, 213–214) argue that the description of Chatti customs in this passage is built on a literary *topos* common in the Greek-Roman world, with no source value for the reconstruction of ancient Germanic rituals in warrior contexts. Evidence from other classical authors, on the other hand, indicates that similar tests of the novice's courage and manliness were performed by different Germanic tribes. Ammianus Marcellinus (*c.* AD 330–395), for instance, reports in his *Res Gestae* that the younger warriors among the Taifali had to serve the seasoned troops until they had killed a bear or a boar by themselves (*Ammianus Marcellinus*, vol. III, book xxxi, chap. 9):

> *Taifalorum gentem turpem obscenae vitae flagitiis ita accepimus mersam, ut apud eos nefandi concubitus foedere copulentur maribus puberes, aetatis viriditatem in eorum pollutis usibus consumpturi. porro siqui iam adultus aprum exceperit solus vel interemerit ursum immanem, conluvione liberatur incesti.*
>
> We have learned that these Taifali were a shameful folk, so sunken in a life of shame and obscenity, that in their country the boys are coupled with the men in a union of unmentionable lust, to consume the flower of their youth in the polluted intercourse of those paramours. We may add that, if any grown person alone catches a boar or kills a huge bear, he is purified thereby from the shame of unchastity.

17 Based on a detailed examination of the matrix, Blaney (1972, 66–67) argued that the horned figure is one-eyed and can be related to the one-eyed god Óðinn (cf. Price 2019, 308). Blaney's suggestion was based on Oxenstierna 1956.

Most likely, these customs among early Germanic tribes in continental Europe can be related to the initiation rituals performed by *berserkir*-groups during the Viking Age in Scandinavia, which also included the killing of a predator, such as a bear (cf. Blaney 1972, 91–92).

Old Norse *berserksgangr*

As a full member, the *berserkr* performed something called *berserksgangr* in battle contexts. This compound can be translated "*berserkir* rage or frenzy", or rather "*berserkir* movement or walking", i.e. "go berserk".[18] In *Ynglinga saga* chap. 6, Snorri describes *berserksgangr* as thus (*Snorri Sturluson*, 17; *Snorri Sturluson [transl.],* 10):

> *[…] en hans menn fóru brynjulausir ok váru galnir sem hundar eða vargar, bitu í skjǫldu sína, váru sterkir sem birnir eða griðungar. Þeir drápu mannfólkit, en hvártki eldr né járn orti á þá. Þat er kallaðr berserksgangr.*
>
> […] his [Óðinn's] own men went to battle without coats of mail and acted like mad dogs or wolves. They bit their shields and were as strong as bears or bulls. They killed people, and neither fire nor iron affected them. This is called go beserk [sic.] (*berserksgangr*).

The expression *berserksgangr* is also attested in other Old Norse prose narratives. When, for instance, the *berserkr* Ljot the Pale in *Egils saga* chap. 64 (13th century; *Egils saga*, 202) entered the arena, the *berserksgangr* came over him and he started bellowing (*grenja*) menacingly and biting at his shield (*Ok er hann gekk fram á vǫllinn at hólmstaðnum, þá kom á hann berserksgangr, tók hann þá at grenja illiliga ok beit í skjǫld sinn*).

The Old Norse verb *grenja* is also used for the sound of a bear (see above). The Viking Age poem *Haraldskvæði* indicates that the *berserkir* and the *ulfheðnar* were bellowing (*grenja*) and howling (*emja*) menacingly like bears and wolves just before battle. They were also hewing into their shields (see above). Archaeological evidence shows that this should not be interpreted as a literary invention as, for instance, Klaus von See argued previously (Von See 1961). For instance, the rook from the Lewis chessmen (Scotland; 12th century), depicting a warrior biting his shield, indicates the opposite (Fig. 5). Scholars have previously interpreted this battle fury of the *berserkir* as a symptom of physical or mental illness, rabies, or a genetic predisposition to violence in certain individuals (see overview in Wallenstein 2015, 31; cf. Nordberg/Wallenstein 2016, 56). Recently, it has been argued that these warriors instead used certain techniques to alter their state of consciousness as preparation before battle (Dale 2014, 96–98). This might be compared with modern athletes using techniques to prepare before events. The animal-like expressions during *berserksgangr* were not symptoms of being *berserkir*, but a means for going berserk. Dale argues that the *berserkr* imitated the predators' behaviour in order to incorporate their rage or frenzy. This was a ritual act of mimesis that would enhance their ferocity. Historians of religion, Andreas Nordberg and Frederik Wallenstein, suggest that these warriors induced their violent, ecstatic and predatory state by means of ceremonial dances, including the wearing of animal masks and other rituals: The mental state of the berserkers during the *berserkersgangr* can be considered as a kind of inspired, focused battle trance in the form of a violent, ecstatic, and instinctive animal state (Nordberg/Wallenstein 2016, 57).

18 See Heggstad et al. (2012, 69), who explains the term "rassinne som stundom tok berserkane", "berserksgang".

When the predator (the bear or the wolf) takes control of the warrior during his battle trance, his human side is distanced from his violent actions. This dehumanisation results in freedom from moral responsibility and human feelings.

Shifting shape

Sources report that both the deity Óðinn and the human *berserkir* had the ritual ability of shape-shifting. In *Ynglinga saga* chapt. 7, it is described as thus (*Ynglinga saga*, 18; Snorri *Sturluson; Snorri Sturluson [transl.]*, 10):

> Óðinn *skipti hǫmum. Lá þá búkrinn sem sofinn eða dauðr, en hann var þá fugl eða dýr, fiskr eða ormr ok fór á einni svipstund á fjarlæg lǫnd at sínum ørendum eða annarra manna. Þat kunni hann en at gera með orðum einum at sløkkva eld ok kyrra sjá ok snúa vindum hverja leið.*
>
> Óðinn could shift shape. When he did so his body would lie here as if he was asleep or dead; but he himself, in an instant, in the shape of a bird or animal, a fish or a serpent, went to distant countries on his or other men's errands.

In this euhemerised context, Óðinn is not presented as a deity, but as a "shaman" with ritual skills (Lindow 2003; cf. Clunies Ross 2019, 299).[19] *Egils saga* reports that human *berserkir* also possessed a shape-shifting ability, but not in a shamanic sense. Egill Skallagrímsson was born and raised in a *berserkir*-family. His grandfather Úlfr (also called Kveld-Úlfr) was a *berserkr* and was considered "a great shapeshifter" (*miǫk hamrammr*; *Egils saga*, chap. 1, 4).[20] When fighting he shifted shape (*hamask*), but he did not act out of his body as Óðinn did. The transformation of Kveld-Úlfr took place rather on a mental level. Once, when he was fighting against King Haraldr's men on a ship with his son, Skallagrímr (Egill's father), they both shifted shape, but they did not transform into animals in a physical sense: Kveld-Úlfr had a gigantic double-bladed axe in his hand. Once he was on board, he told his men to go along the gunwale and cut the awnings from the pegs, while he stormed off back to the afterguard, where he is said to have shifted shape (*at þá hamaðisk hann*). Some other men of his shifted shape, too (*er þá hǫmuðusk*), killing everyone they saw, and so did Skallagrímr when he ran around the ship (*Egils saga*, chap. 27, 69). Afterwards, when Kveld-Úlfr's fury was past, he was so tired that he had to go to bed and eventually he died there from his exertion.

The shape-shifting-phenomenon is thus described in many different ways in the sources (see overview in Aðalheiður Guðmundsdóttir 2007).[21] Some sources report that shape-shifting is related to shamanistic phenomena where the free-soul is transported in the body of an animal, while the practitioner's body is lying as dead, as in the case of Óðinn. Bǫðvarr bjarki shifted shape and appeared in his last battle as a bear, while his body was lying in the hall of King Hrólfr. *Hrólfs saga kraka* chaps. 50–51 (*The Saga of King Hrolf Kraki*, chap. 33, 74) states thus:

19 Rydving 2011 is critical of the use of the comparative concept of shamanism in cross-cultural studies.

20 In *Egils saga* it is said that Kveld-Úlfr was *hamrammr* "able to change one's shape". This compound includes the noun *hamr* meaning "form, shape", "skin", or "shape assumed by a disembodied spirit" and the adjective *rammr* "strong, powerful, mighty". A person who had the ability to change shape was also called *hamhleypa* "ham-leaper", i.e. he had the ability to act out-of-body like a wolf or a bear, in distance from his sleeping body. Other related terms and expressions are *hamremi* "the state of being *hamrammr*", *eigi einhamr* "not one skin", *hamast* "to assume another shape". See e.g. Cleasby/Vigfusson 1957; Samson 2011, 244–260; Dale 2014, 120–127; Wallenstein 2015, 29–30.

21 There is also another type of shape-shifting, which could be designated the werewolf-transformation, where the body is believed to be transformed. See Wallenstein 2015, 27–28, and below.

Þat sjá þeir Hjörvarðr ok menn hans, at björn einn mikill ferr fyrir Hrólfs konungs mönnum ok jafnan þar næst, sem konungrinn var. Hann drepr fleiri menn með sínum hrammi en fimm aðrir kappar konungs. Hrjóta af honum högg ok skotvápn. En hann brýtr undir sik bæði menn ok hesta af liði Hjörvarðs konungs, ok allt þat, sem í nánd er, mylr hann með sínum tönnum, svá at illr kurr kemr í lið Hjörvarðs konungs.

Hjörvarðr and his men saw a great bear advancing in front of King Hrólfr's troop. The bear was always beside the king, and it killed more men with its paw than any five of the king's champions did. Blows and missiles glanced off the animal, as it used its weight to crush King Hjörvarðr's men and their horses. Between its teeth, it tore everything within reach, causing a palpable fear to spread through the ranks of King Hjörvarðr's army.

Also, Bǫðvarr bjarki's father *Bjǫrn* "the bear" was a shape-shifter in a more physical sense of the term. During the night, he was the human lover of Bǫðvarr's mother *Berra* "the she-bear", but in the morning he put on the "bear-skin" (*bjarnarhamr*) and went out as a bear. In *Hrólfs saga kraka* chap. 26 (*The Saga of King Hrolf Kraki*, chap. 20, 37–38) we read thus:

Þar eru þau [Bjǫrn and Berra] *í hellinum um hríð, því at hún vildi ekki skiljast við hann, á meðan hún á kost. Hann kallar henni þat ósæmiligt at vera þar hjá honum, því at hann sé dýr um daga, en maðr um nætr. […] Hann segir henni fyrir marga hluti, ok steypist síðan bjarnarhamrinn yfir hann, ok gengr björninn svá út ok hún eptir honum ok litast um, ok þá sér hún koma mikit lið fram fyrir fjallsöxlina, ok fara margir hundar ok stórir fyrir liðinu. Björninn rennr nú frá hellinum ok með fjallinu fram.*

For a time they [Bjǫrn and Berra] stayed together in the cave, because she did not want to part from him while she still had a choice. He told her it was not right for her to be there with him, because he was a beast by day, even if he again became a man at night. […] He foretold many things to her, and afterwards the bear-shape came over him. Then the bear went out, and she followed him. When she looked around, she saw a great company of men circling the side of the mountain. A large pack of hounds raced in front of the men, and now the bear began to run. Turning away from the cave, he ran along the slope of the mountain.

In the oldest preserved tradition related to *berserkir*, *Haraldskvæði*, the condition seems, in my opinion, to be psychological, and not physical. This type of mental shape-shifting has been related to rituals intended to create altered states of consciousness in connection to the *berserksgangr* mentioned above.[22] By means of religious practices and rites, extreme mental states can thus be achieved, such as ecstasy. Such rituals might also have included symbolical transformations into predatory animals, such as bears or wolves. An example of this phenomenon can be seen in *Eyrbyggja saga* chap. 25 where the two *berserkir,* Halli and Leiknir, are described *(Eyrbyggja saga*, 61; *Eyrbyggja Saga*, 68–69):

Þeir gengu berserksgang ok váru þá eigi í mannligu eðli, er þeir váru reiðir ok fóru galnir sem hundar ok óttuðusk hvárki eld né járn, […].

22 Nordberg/Wallenstein 2016, 55 state: "This transformation takes place on the mental level, but is still to be considered a type of shape-shifting, where the transformation is a shift in 'nature' visible through behaviour rather than external shape". Cf. also Wallenstein 2015, 27.

> They used to go berserk, and once they had worked themselves up into a frenzy, they were wholly unlike human beings, storming about like mad dogs and afraid of neither fire nor weapons.

The text states explicitly that the *berserkir* in rage were "mad as dogs" (*fóru galnir sem hundar*), not that they were transformed into dogs.

Berserkir, bears, and Óðinn

These rituals of the *berserkir*, which included bear symbolism, might also have some connection with the cult of Óðinn (cf. Wallenstein 2015; Nordberg/Wallenstein 2016). There are several indications in the sources supporting such an assumption. The *berserkir* are, for instance, called Óðinn's men in *Ynglinga saga* (see above). The fury of the *berserkir* could also be related to Óðinn's name. The Proto-Germanic name **Wōðanaz* (*-inaz*), contains a first element **wōð-* "fury" (cf. Hultgård 2007). Adam of Bremen describes the image of Wodan (Óðinn) in the sanctuary of Uppsala further as thus: "the other, Wodan [Óðinn], that is the Furious" (*Alter Wodan, id est furor*; *Adam of Bremen* [4.26]; *Adam of Bremen [transl.]*, 207). Like the *berserkir,* who were not affected by fire or iron when going berserk, weapons were also useless against Óðinn in battle, according to *Hávamál* st. 148 (*Edda; The Poetic Edda*, 33):

> *Þat kann ec it þriðja, ef mér verðr þǫrf mikil / haptz við mína heiptmǫgo: / eggiar ec deyfi minna andscota, / bítað þeim vápn né velir.*
>
> I know a third one if there's great need for me that my furious enemies are fettered; the edges of my foes I can blunt, neither weapons nor cudgels will bite for them.

In the same way as the *berserkir*, Óðinn is a shape-shifter (see above), who sometimes seems to appear as a bear (cf. Ström 1980, 267). Saxo recounts the story about Óðinn disguised as the charioteer *Brúni* "the brown one" (Latin *Bruno*), who kills Haraldr Hilditǫnn (Latin *Haraldus Hyldetan*). Perhaps Óðinn appears here in his bear-shape (*Saxo Grammaticus*, 8.4.8–8.4.9):

> *Ad quod silente Brunone subiit regem Othynum hunc esse, olimque familiare sibi numen impresentiarum dande uel subtrahende opis gratia uersiformi corporis habitu tegi […].*
>
> When Bruni stayed silent, it entered the king's mind that here was Odin, a deity once his friend and at the moment disguised under his change of shape in order to grant or withhold his help […].

In a similar way to the *berserkir*, Óðinn also has by-names referring to his bear features. Hjalmar Falk mentions the following Óðinn-*heiti* (appellations) and their meanings: *Bjarki* "den lille bjørn" ("the small bear"); *Bjǫrn* "bjørn" ("bear"); *Hrjótr til hrjóta* "brumme (f. e. om bjørnen)" ("growl, for instance as a bear"), *Jólfr* "egentl. hesteulv, d.v.s. bjørn" ("actually horse-wolf, i.e. bear"), and *Jǫlfuðr, Jǫlfaðr* "bjørn" ("bear"), *jalfr* sideform til *jalmr* "alarm". "Også dyrenavn kan ha form av nomina agentis på *-uðr*" ("Animal names can also take the form of nomina agentis on *-uðr*"; Falk 1924, 4, 18, 20–21; cf. Price 2019, 67). In the Eddic poem *Sigrdrífumál* st. 13–16, the runes carved on a bear's paw are related to Óðinn (= Hroptr; cf. Ney, this volume; *Edda; The Poetic Edda*):

Hugrúnar scaltu kunna, ef þú vilt hveriom vera/ geðsvinnari guma;/ þær of réð, þær of reist,/ þær um hugði Hroptr,/ … á biarnar hrammi […].

Mind-runes you must know if you want to be / wiser-minded than every other man; / Hroptr [Óðinn] interpreted them, / cut them, thought them out, / […] on the bear's paw, […].

As mentioned in the introduction of the present study, Margaret Clunies Ross has criticised the notion that the *berserkir* used rites in order to be supernaturally empowered (Clunies Ross 2019; cf. Wamers 2009). Even if I can agree with her that the *berserkir* are not set in a religious context in the oldest preserved skaldic poems, the connection between Óðinn, bears, and *berserkir* in the sources just mentioned points in another direction. If the interpretation of the one-eyed figure on the helmet plate dies from Torslunda as Óðinn is correct, we actually have first-hand evidence of the relationship between the Æsir-god and animal-warriors. In addition, in the Icelandic medieval-Christian law called *Grágás* (13th century), *berserksgangr* is listed among the magical practices that attracted a penalty of lesser outlawry. In *Kristinna laga þáttr 7* (manuscript Konungsbók, *c.* 1258–1262), it is listed in the section of forbidden (pagan) religio-magical practices. There we read thus (*Grágás*; text and transl. after Dale 2014, 314):

Ef maðr gengr berserks gang ok warder þat fiörbaugs Garð ok sua wardar körlum þeim er hia eru. nema þeir stöðue hann at. þa wardar eingum þeirra ef þeir geta stoðuat hann. Ef optar kemr at. ok wardar fiorbaugs garð þott stoðuat werði.

If a man goes berserk (*gengr berserks gang*) he shall be punished with lesser outlawry as shall those men that are present unless they stop him. None shall be punished if they are able to stop him. But if it happens again the penalty is lesser outlawry even if he is stopped.

This instance indicates that "to go berserk" was considered as a type of ritual practice, which was still performed when the law was formulated. It also suggests that such a practice in more ancient times included some type of magico-religious associations.

Conclusion

To conclude, we cannot rule out the notion that bears were important symbols for warrior-bands who worshipped Óðinn during the Late Iron Age. Different types of sources, such as archaeological and iconographic material, as well as Old Norse texts, support this assumption. Memories of warriors wearing bear-shirts – the *berserkir* – were narrated in the High Middle Ages, and also later. In the romantic-nationalistic paintings of the 19th century, such motifs were popular, as may be seen in O. P. Hansen Balling's large oil painting *Harald hårfagre i slaget ved Hafrsfjord* (1870; cf. Fig. 1). Still today, the expression "to go berserk" is common.

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Fig. 1. O. P. Hansen Balling's large oil painting Harald hårfagre i slaget ved Hafrsfjord, *1870 (© Nasjonalmuseet, Norway).*



Fig. 2. The 7th-century helmet-plate dies from Björnhovda, Torslunda (Öland). a: Man between bears; b: Man with axe holding a roped animal; c: Warriors carrying spears; d: Dancing man with horned head-dress and man with spear wearing a wolfskin (© Statens Historiska Museer, Sweden, inv. no. SHM 4325; cf. Stjerna 1903, fig. 1).

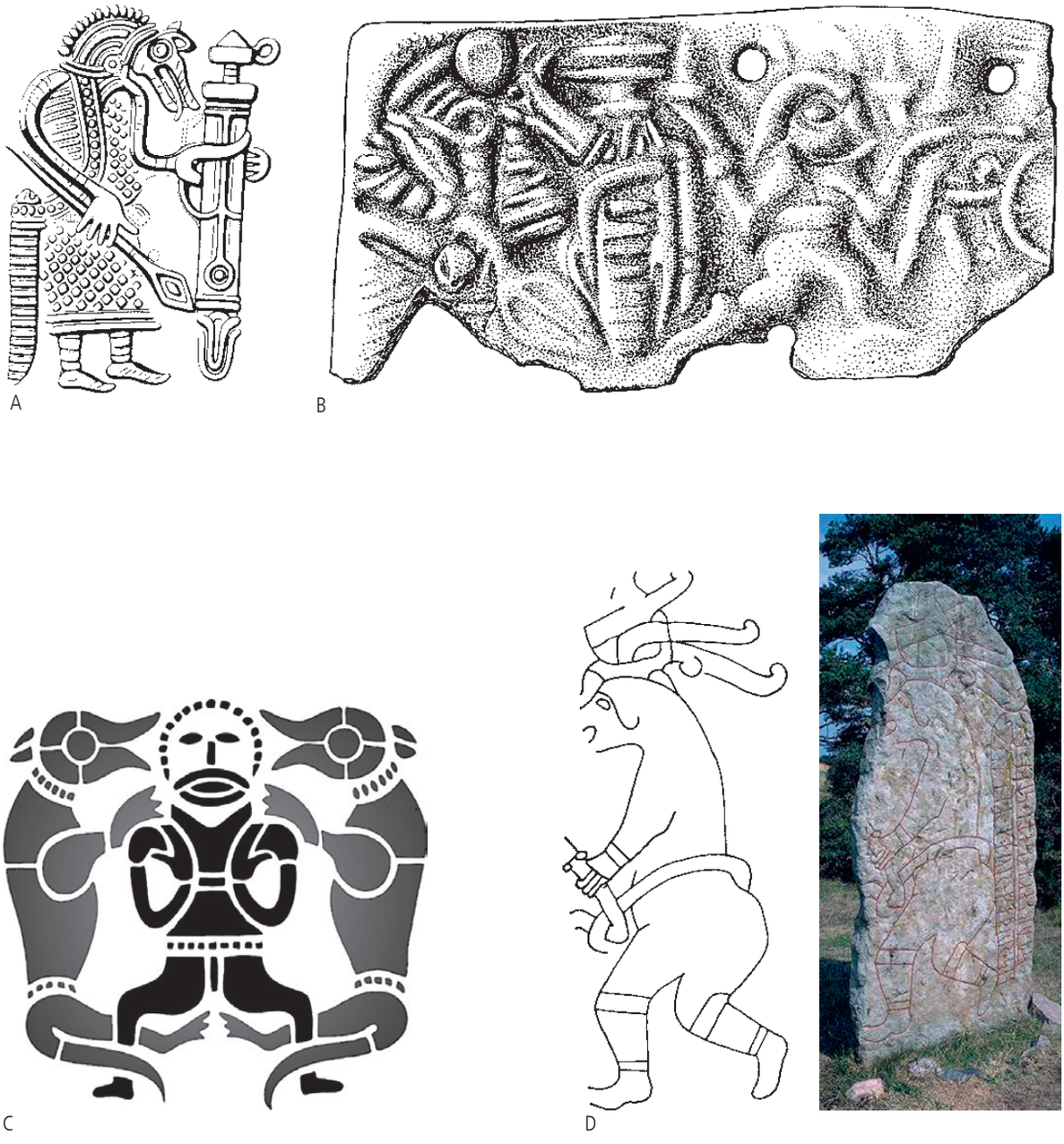


Fig. 3. Disputed berserkir *imagery. a: Scabbard mount (re-used), grave 2 from Gutenstein, Sigmaringen, Baden-Württemberg, Germany, late 7th century or around 700 (after* Hauck *1957, fig. 5); b: Sheet-metal, grave 139 from Obrigheim, Bad-Dürkheim, Rheinland-Pfalz, Germany, middle third of the 7th century (after* Böhner *1991, 717 fig. 29); c: Purse lid from the Sutton Hoo ship burial, England, 7th century (drawing L. F. Thomsen after a template); d: Image from the runic stone from Källby, Västergotland, Sweden,* c. *1000 or early/first half of the 11th century (after* Paulsen *1967, vol. 1, 44 fig. 19).*



Fig. 4. Hǫttr's blood-drinking ceremony, from Hrólfs saga kraka, *as depicted in Olaus Magnus'* Historia de gentibus septentrionalibus, *Book 5, chap. 15 (after* Historia de gentibus septentrionalibus *1982).*



Fig. 5. Rook chessman depicting a warrior who bites his shield; Isle of Lewis, Scotland, 12th century (© The Trustees of the British Museum).

Table 1. Sources on berserkir *– a simplified classification model. *Skaldic and Eddic poems as composed in the Viking Age by "insiders" are direct sources, although they were not written down until the Middle Ages. Their worldview and ethics are obviously not Christian, and the medieval Icelanders regarded them as pagan. They can thus be considered as oral art forms from the past. The formalistic language in these poems, rhymes, kennings, and their metres might have allowed them to retain their original shapes for centuries. Especially skaldic poetry can be regarded as based on a firm oral tradition before being written down. Some Eddic poems are problematic for this classification, since their dating is so uncertain. Cf.* Meulengracht Sørensen *1991.*

Primary sources (produced by insiders)
Skaldic and Eddic poetry*
Archaeological and iconographic materials
Onomastic sources
Runic inscriptions

Secondary sources (produced by outsiders)
Icelandic Sagas (Kings' Sagas, The Sagas of Icelanders, Fornaldarsögur)
Medieval Laws
Classical and Medieval Latin texts

"The Bear Ceremonial" and bear rituals among the Khanty and the Sami

By Håkan Rydving

Keywords: Bear rituals, comparison, Khanty, limitative approach, Sami

Abstract: Researchers from different fields of study agree on the importance of comparison, but debate how *to compare. Rather than comparing globally, on the basis of secondary literature and looking for similarities alone, this article argues for a limitative approach that restricts itself to just a few cultures, is based on local sources, and takes both resemblances and differences into account. In contrast to the idea of a uniform and transcultural bear ceremonial in northern Eurasia, it focuses on plurality and diversity when discussing and comparing the bear rituals found among the southern Khanty (about 1900) and the southern Sami (about 1750).*

Editorial note: This text was already published in 2010 in Temenos 46(1), issued by the Finnish Society for the Study of Religion. It is reprinted here, with slight editorial changes, with the permission of the present editors of Temenos and the author.

Introduction

When the non-theological study of religions began at European universities during the late 19th and the early 20th century, analysis by means of various forms of comparison became *the* characteristic method of this new field of research; as a result, at a number of universities the subject was named "comparative religion".

In most cases, the comparative enterprise consisted of macro-comparison and a search for similarities. Data was collected from all over the world – generally from secondary sources – and arranged according to types, based on evolutionary theories. When these theories were abandoned during the 1950s, various non-evolutionary and non-historical morphologies were developed. These were often called "phenomenologies of religion", a confusing term, since they had little or nothing to do with philosophical phenomenology. Even in studies of singular religions, parallels and analogies drawn from one or another of the "phenomenologies of religion" were used to interpret the data, without paying any attention to time and place.

While the study of religions still adhered to comparison as its main analytic tool, anthropology had taken another direction, not least due to the seminal local studies of British anthropologists such as Bronislaw Malinowski and E. E. Evans-Pritchard, whose investigations were based on prolonged fieldwork. The anthropological focus on the local field required scholars to learn local languages and – rather than use phenomena from elsewhere to interpret the culture under consideration – to

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 677–692 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134356

try to understand the elements of that culture in relation to its own context. The era of the armchair anthropologist was over.

It was not until the 1970s that this reorientation towards the local began to exert any significant influence on the study of religions, but during that decade, the criticism of earlier global constructions (especially those of Mircea Eliade) became increasingly pronounced. This of course did not mean that scholars stopped comparing (since making comparisons is a natural and necessary human activity), but merely that "the comparative method" – at least when applied on the global scale – was effectively dead. It is only in the past two decades that scholars of religion have once again begun to discuss comparison as a method (cf. Segal 2006).

Debating comparison

During the 1990s, both the American Academy of Religion and the North American Association for the Study of Religion arranged seminars on comparison, or, as it was called, the New Comparativism. This American debate was inspired by the publication of the second edition of William Paden's *Religious Worlds: The Comparative Study of Religion* (Paden 1994), a book that is used as an introductory text at many universities both in the USA and in Europe. Both Paden and most of the other participants in the debate were searching for a middle way between Eliade's essentialism, based on universals, on the one hand, and the anti-comparative trends found at the extreme of what has been called (at least by its opponents) "post-structuralist" or "post-modern" thought, on the other. However, to quote one of the mantras in the debate, the question is not *whether* we should compare, but *how* to do so. Even if most of the participants in the debate agreed on the importance of discussing appropriate modes of comparison, it is clear that they were using the term in at least three different ways. Some of them emphasised that comparison is a universal cognitive process of human beings, others discussed various methodological questions, in relation for example to the comparison of two different forms of Judaism or of Judaism and Hinduism (i.e. the limitative approach to comparison, illustrated in this essay), but the majority were concerned with appropriate principles for global comparison, based on ideas either of universals or of resemblances.[1]

The universals/resemblances dichotomy is reminiscent of one of the most basic questions in philosophy, the relation between individual things on the one hand and general terms on the other (cf. Saler 2000, 152–153). The philosophical debate has for a long time been leaning towards various kinds of resemblance theories. The comparative method used by students of religion, however, has so far focused almost exclusively on comparison on the macro-level, and has related the actual comparative work to various theories of universals or particulars, resemblances or differences, on a global level. Most of the proponents and opponents of "the comparative project" or the "new comparativism" have discussed it solely in terms of comparisons where the researcher is dependent on secondary literature for most of his or her examples.

A limitative approach

If modernist research has been (and is) characterised by grand theories and generalisations that are often global in their reach, research inspired by more recent theories has focused on the particular and

1 See contributions in Method and Theory on the Study of Religion 8, 1996; Patton/Ray 2000.

on contextuality.[2] Such a perspective, however, does not make comparison impossible; there is a type of comparison that restricts itself to a single region or just a few cultures. This limitative approach to comparison – a term coined by Jan Platvoet (Platvoet 1982) – can be combined with a focus on the local as well as with demands for contextualisation and with the scholar's knowledge of the local language and culture, which we now consider so important. Good examples of this type of study are Clifford Geertz' comparison of Islam in Indonesia and Morocco, and Roberte N. Hamayon's studies of indigenous religions in Siberia (Geertz 1973; Hamayon 1990). It is a type of comparison that starts from the local and compares syntheses based on the study of a few local cultures.[3] Where an individual scholar does not personally have the local knowledge necessary for a comparative study, a group of specialists might co-operate on a comparative project. I hope (and believe) this type of joint venture will be more common in the future.

The example of a comparative analysis that I will present in the following is a very limited one, a comparison of two rituals that share (at least) the common feature of having a bear as the focal point of their respective activities: these rituals are the bear ceremonials of the southern Khanty (*c.* 1900) and the southern Sami (*c.* 1750). My interest in these two ceremonials was initially merely linguistic, and consisted in collecting material about the language used in the Sami bear ceremonials.[4] However, the differences I found when I also began to study Khanty and the literature on the Khanty bear ceremonials made me increasingly sceptical towards the common idea that all the different types of bear ceremonials in northern Eurasia, from the Sami in the west to the Ainu in the east, were to be regarded as concrete forms, or representatives, of *a single* ritual, *the* bear ceremonial (la *fête de l'ours*, das *Bärenzeremoniell*).

The occurrence of bear ceremonials among several northern Eurasian peoples has in other words been used as an argument to support various generalising theories (two classical comprehensive comparative monographs are Hallowell 1926 and Lot-Falck 1953; cf. Paproth 1976; Pentikäinen 2007): about religions in northern Eurasia, about hunting peoples, about certain ecological conditions, etc. These theories were not, however, based on any careful comparison of the different ritualisations in local settings. They merely focused on similarities while disregarding the dissimilarities. Since I agree with Lauri Honko that "the religious beliefs and practices of the Finno-Ugric peoples provide an interesting test case for comparative methodology in the history of religions" (Honko 1987, 330), I here attempt to test the claim that the bear rituals of the Khanty and the Sami are in fact so similar that they can – and should – be regarded as concrete forms of one and the same "North-Eurasian Bear Ceremonial". As I hope to show, the answer to this question is not as self-evident as scholars have tended to think.

Contexts

Before describing and comparing the two rituals, I present some basic information about the two peoples under study.

The Khanty

The traditional settlement area of the Khanty – the easternmost of the peoples that speak a Finno-Ugric language – stretches in an arc along the Ob' river and its tributaries, from Vasyugan in the southeast towards the mouth of the Ob' in the north (Fig. 1). There are today about 25,000 Khanty,

2 Cf. the different suggestions in, for example, Gingrich/Fox 2002; Gothóni 2005; Idinopulos et al. 2006.
3 Another type of comparison is exemplified in Rydving 2010.
4 I am preparing a Sami counterpart to Bakró-Nagy 1979.

some 70 % of whom speak Khanty. One usually reckons with eight main dialects. Of the five different literary languages in use, the most important is the one based on the Middle Ob' dialects (Skribnik/Koshkaryova 1996). Culturally, the Khanty in the different areas are closely related to the other Ob-Ugrian people, the Mansi, but linguistically the two ethnic groups are clearly differentiated. This means for example that the northern Khanty have a culture that is more similar to the culture of the northern Mansi than to that of the southern and eastern Khanty, although their language is distinctly Khanty. A typical characteristic of the social culture of the Khanty is the division into two exogamous patrilineal phratries, the *por* and the *mosh*. The Por are linked to the bear and the Mosh to the hare (or goose; cf. Balzer 1999, 184). Since the Khanty are a small people spread over a large area, there are considerable cultural and linguistic differences between the different regions.[5] Even so, scholars have had a tendency to generalise and write as if all the Khanty (or even all the Ob-Ugrians) shared an identical (or at least very similar) culture and religion, although this tendency has not been as common in studies of the Khanty as it has in those of the Sami (see below).

The earliest information we have about Khanty bear rituals dates from the beginning of the 18th century, but it was not until the late 19th century that descriptions became more detailed. The most important information was collected and published by Russian scholars like Nikolay Gondatti (Gondatti 1888) and Serafim Patkanov (Patkanov 1897; 1900), and, at the beginning of the 20th century, by the Finnish scholar K. F. Karjalainen (Karjalainen 1914; 1927, 193–235). In the post-revolutionary era, the material collected by V. N. Chernetsov is especially valuable. Chernetsov documented bear rituals in 1936/37, succeeded in filming dances at a bear ritual in 1948, and collected new material during the 1960s (Tschernjetzow 1974, 285, n. 1). During the Soviet era the bear ceremonials did not cease, at least not in the north and east. They were so popular that the authorities even thought of declaring them secularised (Balzer 1999, 190), bringing them under the general policy of folklorisation. However, such a decision was never made. Since the fall of the Soviet Union and the renaissance of indigenous customs, some of the bear festivals have become important political manifestations of Khanty (and Ob-Ugrian) unity. Today, we might echo the Russian folklorist Olga Balalaeva in distinguishing two types of bear festival: "quite private, elder-led festivals that occur on the back rivers of Eastern Khanty camps and the larger, more popular festivals led by [members of the political Association for the Salvation of the Ugra] as well as elders" (Balzer 1999, 197). The traditional bear ceremonials differed from one Khanty region to another. In the north there were only few rituals during the actual hunt and in bringing a bear home to the settlement, with more elaborate ceremonies occurring during the bear festival itself; in the south, rituals connected to the hunt and the homeward journey were dominant; in the east, the bear ceremonials were relatively insignificant (Karjalainen 1927, 194, 200).

The example I will discuss concerns the rituals of the southern Khanty, as that area is best documented in the oldest sources. Today, the southern Khanty are Russified and totally integrated into mainstream society.

The Sami

The traditional settlement area of the Sami – the westernmost of the peoples that speak a Finno-Ugric language – stretches in an arc from the central parts of Scandinavia to the Kola peninsula (Fig. 2). There are today about 80,000 Sami, of whom approximately 40 % speak Sami. Like the Khanty, the Sami are a small group of people spread over a large area; the Sami language is therefore split into a number of different dialects and dialect groups. One usually reckons with ten main dialects, further divided into dialects and sub-dialects. Of the six Sami literary languages in use, North Sami is the most important.

5 Cf. the excellent introduction to the Khanty world-view in Jordan 2003.

Despite the great linguistic and cultural variation, most scholars who have studied Sami culture have disregarded this variation and written about the Sami as if they all shared an identical culture.

The oldest information about Sami bear ceremonials dates from the beginning of the 17th century, but the most important sources are from the late 17th and the first half of the 18th century. The first monograph was published as early as 1755 (Fjellström 1755). We know that there were regional differences, but even today no study has tried to map them. Unlike among the Khanty, the Sami bear rituals are no longer performed, since the indigenous religion perished during the 18th century. A few examples of bear ceremonials, however, are mentioned in 19th-century sources. The area that is best documented is that of the South Sami, and my example is therefore from that region. Despite several centuries of cultural and linguistic influence from Norwegian and Swedish, as well as a cultural impact, many South Sami still speak their original language. This is accounted for by several factors: the South Sami have lived isolated from Norwegians and Swedes, with an economy based almost exclusively on the reindeer; Sami is used as a means of communication within families; the language has a high status and is an important social and cultural symbol of identity (Jernsletten 1997; Rydving 2004a; b; 2008).

The rituals

How should rituals be compared? One possible way is to break them up into elements, as Anna-Leena Siikkala did in her study of indigenous ritual specialists ("shamans" in her terminology) in Siberia (Siikkala 1978). I did the same in my study of ritual aspects of the process of religious change among the Lule Sami, although I used another terminology, adopted from Melford E. Spiro, which is the terminology I will use here as well (cf. Rydving 2004a, 93). This means that I use "ritual" as "the generic term for any kind of cult behaviour, regardless of its degree of elaboration or complexity", while "rite" denotes "the minimum significant unit of ritual behaviour", "ceremony" "the smallest configuration of rites constituting a meaningful ritual whole", and "ceremonial" "the total configuration of ceremonies performed during any ritual occasion" (Spiro 1982, 199).

Bear ceremonials among the southern Khanty in the decades around 1900[6]

Among the southern Khanty, in the decades around 1900 the bear hunt was undertaken roughly as follows.[7]

A. The hunt

1) Preparations for the hunt. The bear hunt was never to be planned and it was regarded as dangerous to try to track a bear (Karjalainen 1927, 194). Those who were going to participate in the hunt first had to go through a purification ritual. Both the participants and their food were purified with incense, and they prayed to the bear that it would let them kill it without hurting any of the hunters. After the participants had made the sign of the cross in front of the icons they set out.

6 After Patkanov 1897; Karjalainen 1914; 1927, 193–235; cf. Gondatti 1888; Kharuzin 1895a; b; Kálmán 1968; Tschernjetzow 1974; Schmidt 1989; Glavatskaya 2005.

7 Since the level of analysis in this short article is restricted to the comparison between Khanty and Sami bear rituals in relation to the idea of a "North-Eurasian Bear Ceremonial", I have neither here, nor in the next section (about bear ceremonials among the southern Sami), discussed variations and changes *within* Khanty and Sami bear rituals, only between them. Discussing internal variations as well as differences between different types of sources (texts, archaeological material, participant observation) within each of these two cultures would be the next step in the investigation. Of course, I also need to discuss bear rituals among other north Eurasian groups than the two here under examination in order to test the general applicability of the results of this pilot study.

2) The hunt. Once the bear had been killed, the man who had killed it would throw snow (in the winter) or earth (in the summer) on himself before all the hunters ate the food they had brought with them. The bear, too, was regarded as participating in this meal. Then the body of the bear was laid on its back with its head towards the east, and it was skinned. During the process of removing the skin, the one doing the skinning said a short phrase and broke a few[8] short sticks that were placed beside the bear.

3) On the way home. Where the eating of bear meat was prohibited,[9] the meat was left at the site of the kill, otherwise it was taken to the village. In either case, the skin, with the head, was taken to the village. On the way to the village, those who carried or dragged the bear told it about the places they passed by.

4) Returning to the village. When the hunters and the bear arrived at the village they were greeted. The hunters fired their weapons and the people in the village answered with shots and came out to meet them. The bear skin was sprinkled with water and incense, and the one who had killed it was thrown into the water. Despite the clear division of male and female rituals, both men and women participated in these rituals.

B. The bear festival

1) Preparations for the bear festival. The skin with the head was taken through a back window into the room where the festival was to be held; there it was placed in the sacred corner, with its head resting on its front paws facing the door. A male bear was provided with a cap and a scarf, a female bear with a head cloth and a neck collar with pearl embroidery and rings on the claws. Usually the eyes were covered (in some places the nostrils as well) with coins or pieces of birch-bark. Different types of food were then placed in front of the bear (Karjalainen 1927, 203–206).

2) The bear festival (*îke-pore*). This ceremonial consisted of entertainment for the bear and the participants. It continued over several (often three) evenings. All the participants were sprinkled with water or snow, and they greeted the bear with kisses. The host (or someone else) said to the bear: "Turem's son […]! With an arrow made by Russians you were killed, with a spear made by Russians you were killed. Don't be angry with us!" Thereafter everyone sat down in a fixed order and the festival could begin. It consisted of three elements: bear songs, dancing performances, and short plays (Karjalainen 1927, 206–224). *The bear songs* were sung by male singers without masks and they described the life of the bear.[10] *The dancing performances* took place in intervals between songs and plays. Among certain southern Khanty, for example those living along the river Konda, these dances were the most important element of the bear festival. The dances were performed by men and women in garments that differed from their ordinary clothes and with their faces covered. One of the dances, the so-called bear dance, gave an account of the life of the bear. *The plays* (which were a considerably less important part of the bear festival among the southern Khanty than among the northern) were performed by men in red masks which were often made of birch-bark. The masks that represented men had large noses, while those who performed women wore women's clothes and head-scarves. The actors distorted their voices. The themes were everyday subjects; they could be serious or humorous, and made use of many puns, and were sometimes offensive (even to persons who were present).[11] Each play was very short, but the number of plays could in some areas (but not among the southern Khanty) be very large (Karjalainen 1927, 229–230). In the breaks between the plays songs were sung. The bear festival ended with games to decide when and by whom the next bear was to be killed.

8 Five or seven, if it was a male bear, four or five, if it was a female bear (Karjalainen 1927, 197).

9 Depending on which phratrie one belonged to, the *mosh* (who could eat the meat) or the *por* (who could not eat the meat).

10 Such South Khanty bear songs are reproduced in, for example, Karjalainen/Vértes 1975; Paasonen/Vértes 1980.

11 Some plays are presented in Gondatti 1888 and Karjalainen 1927, 215–220.

3) After the bear festival, the skin was taken out through the back window near the sacred corner. If the bear meat was to be eaten, it was cooked so as to be ready when the festival was completed.

C. Afterwards
The skin was given to the host (the one who had found the bear and arranged the festival) and he could use it as he liked. Generally, it was sold to cover the expenses of the festival. However, it could not be sold until forty days had elapsed, and the host had to celebrate memorial days on the 9th, 16th, and 36th day after the festival.

Bear ceremonials among the southern Sami in the mid-18th century[12]
Unlike among the Khanty, the Sami bear festival was generally celebrated in springtime (although it could also be celebrated during autumn or winter). It thus functioned as a calendrical spring ritual. The following synthesis is based on sources describing the southern Sami festival during the first half of the 18th century.

A. The hunt
1) The bear was tracked (or encircled) during the autumn after the first snow had fallen so that it would be easy to know where it was hibernating.
2) Before the hunt. Among the southern Sami, no preparatory rituals are known from this period that would be comparable to the strict order in which the hunters approached the place where the bear was hibernating found among the Lule Sami during the 1670s. In the latter case, the person who had tracked the bear went first, followed by the others in a specific order.
3) After the hunt. Once the bear had been killed, the hunters walked over it on their skies. Then a twig was attached to the bear's mouth, and one of the hunters sang a *vuelie* (chant) and pulled the twig three times. He could also aim a spear three times at the bear. After that the bear was covered with twigs and left at the hunting ground.
4) Returning home. As the hunters approached the huts they sang a special *vuelie* in order to let the women and children know they had killed a bear. The *vuelie* also told the persons in the settlement whether it was a male or a female. Using the back door, the men entered the tent where the women were sitting with their heads covered. The women looked at the bear hunters through rings of brass, spat chewed alder bark on them, and fastened brass rings on the men's clothes (cf. Paproth 1963). Then they feasted on the best food they had, the hunters in a tent that was erected especially for the purpose of the bear rituals, the women and children in the ordinary tent. After the meal, everyone went to sleep.
5) Collecting the bear. On the second day, the bear was collected with great honours. On the way home the hunters sang different *vuelieh* (chants) and prayed to the bear to protect them from evil.

B. The feast
The bear was taken to the special tent, and the women spat red chewed alder bark at it. It was then skinned by the men, while they sang various *vuelieh*. In one of the *vuelieh* they sang to the bear that it had been killed by men from Sweden, Poland, England, and France. The other *vuelieh* were about where the bear had been taken, about the honour it should be shown, about what the women might be doing in the ordinary tent, etc. Per Fjellström, who wrote the first monograph about the Sami bear rituals, gives the following characterisation of the *vuelie* to the bear:

12 After Fjellström 1755; cf. Niurenius 1905, 18–19 (original text *c.* 1640); Rheen 1897, 43–46 (original text 1671); Lundius 1905, 18 (original text late 1670s); Högström 1747, 209–211; text by Holmberger (1770s), in Hasselbrink 1964; cf. Zachrisson/Iregren 1974; Edsman 1994; 1996; Korhonen 2008.

> "[...] the so-called bear song is not the same and does not have the same contents among all [groups], nor would they decide in advance and prepare a precise order in which to sing it. Instead they probably adjusted [the song] both to existing circumstances and to the bear hunt itself, as well as to the Lapps' own conditions and nature. […] Thus, it is believed that their bear song is performed more with voice and sound than with words. Even if their song makes use of pure words, they are such as are unusual and not used at all in the ordinary Lappish language, and therefore they cannot be understood by anyone, regardless of how skilled they might be in their language, other than those who are instructed and trained in their superstition" (Fjellström 1755, 21–22).

After the bear had been skinned, the meat was carved from the bones and boiled in a certain order. The men ate certain parts of it (which parts, depended on the sex of the bear) in the special tent, the women and children other parts in the ordinary tent. After that everyone rested. Then the hunters washed themselves in lye, ran three times around the place where the bear had been cooked and into and out of the ordinary tent through the ordinary door and the back door, while imitating the growl of the bear.

C. The burial

1) The bear's bones were buried in a precise order. It was important that no bone was broken and that all of them were buried.[13]

2) After the burial. The skin or the liver was used in a game that decided when and by whom the next bear was to be killed.

D. Afterwards

The man who had tracked the bear received the skin and sold it.

Comparison

If we now compare these two ritual complexes we have to look at both the structural level (how elements are connected, the order of the different elements) and the individual rites (the elements of each complex; cf. Tables 1–2). This is possible even if we do not know the exact meaning of all the rites performed. Earlier ritual theories regarded rituals as something scholars could use to "read" the respective culture, since rituals were regarded as communicative acts; the theories formulated by Frits Staal, Catherine Bell, Caroline Humphrey and James Laidlaw, and Roy Rappaport, in contrast, emphasise, among other things, the role of rituals as tools for enculturation and for the "disciplining of the body" even if the "meaning" (as suggested by the ritual specialists or by scholars) is not understood by all – or by any – of the participants (Staal 1975; Bell 1992; Humphrey/Laidlaw 1994; Rappaport 1999). This means that the activities (movements, sounds, etc.) are interesting objects for analysis, even if they only help us answer the question "how", but not the "why". However, for the purpose of the comparison of Khanty and Sami bear rituals, I will compare both outer form (how rites were performed) and "inner meaning", where it is known to us.

Apart from banal resemblances, such as the fact that among both the Khanty and the Sami there is first a hunt and then some kind of festivity, it is evident, even from the very brief summaries of the

13 The fact that the bones in excavated bear graves generally have been split (cf. Zachrisson/Iregren 1974, 39, 96–97) is a good example of the gap between hunting ideology and actual behaviour that Smith (1982, 53–65) called attention to in a classical article.

contents of the two rituals presented here, that the main structures are different. Most of the individual elements differ, each of them occurring in only one of the two rituals. The focus is different: for the Khanty, the most important element was the festival and its entertainments, while for the Sami it was the feast and the burial. Therefore, the principal conclusion to be drawn is that the structural differences between the bear rituals of the southern Khanty and the southern Sami are considerable.

However, there are a few elements that are strikingly similar: from the perspective of "meaning", both rituals involved a) purification rites (even if different ones) for both the hunters and the bear, and b) games to decide when and by whom the next bear was to be killed; while in terms of resemblances in outer form, both rituals involved c) prayers and songs to the bear (in one case with similar content, namely that others were to blame for the death of the bear), d) several meals (feasts), and e) the use of the back door.

It might appear that these resemblances do indeed suggest a close connection between the two ritual complexes. However, there are various types of resemblance. Purification rites, prayers, songs, and meals (feasts) are all found in various types of ritual context (not only bear rituals), and their occurrence in the two bear ceremonials thus cannot be used to support the hypothesis of a connection. What remains are three (more specific) elements: a) the fact that the killing in both contexts is blamed on someone else, b) the games to decide about the next hunt, and c) the use of the back door during the ritual. But since the first two elements are found in hunting ceremonials around the world (cf. Hutter 2001), neither of them can be used to support the hypothesis. The sacred back door is the most interesting resemblance and might indeed be a connecting element (cf. Ränk 1949). However, one or two elements do not make a ritual.

Conclusion

The comparison of the bear ceremonials among the southern Khanty and the southern Sami gives a negative result when we consider both resemblances and differences, rather than resemblances alone, as was the case in earlier versions of the comparative enterprise. It seems as if the main connecting point is the bear itself. The conclusion has to be that the two examples of bear rituals do not support the hypothesis that the different bear rituals in northern Eurasia are concrete forms, or representatives, of one common ritual. This conclusion calls into question the whole idea of a "North-Eurasian Bear Ceremonial". However, this negative result does not mean that the religions of the Finno-Ugric peoples cannot "provide an interesting test case for comparative methodology in the history of religions" (Honko 1987, 330). On the contrary: it is in my opinion evident from the case presented here that they can indeed function as exemplary sources for comparative analysis.

Acknowledgements

I am most grateful to Peter Cripps and Ellen Valle for their careful correcting of the English language, and to Veikko Anttonen and the two anonymous reviewers for their valuable comments on a preliminary version of the text.

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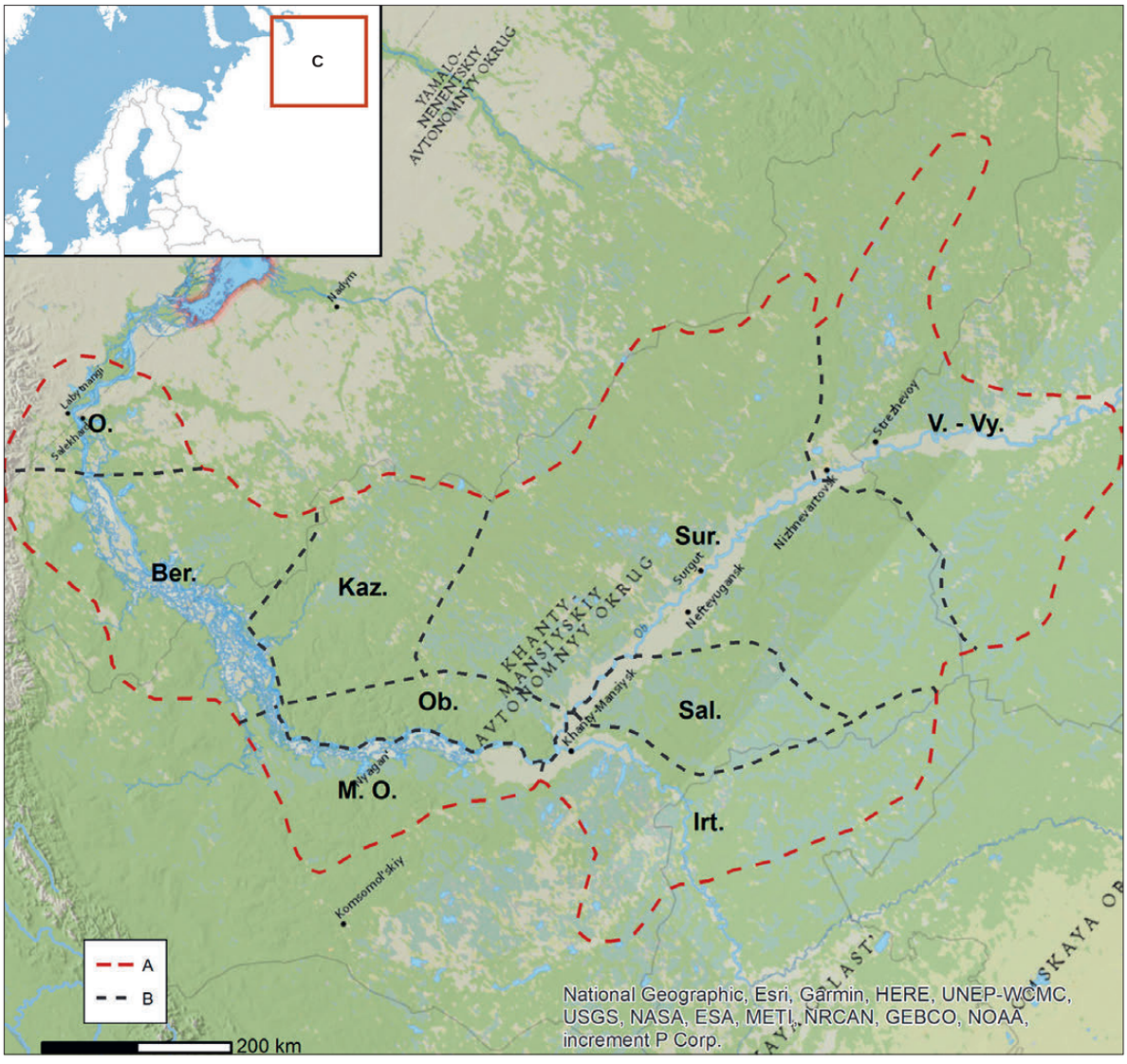


Fig. 1. The main dialect areas of Khanty. A: extent of the Khanty area of settlement; B: approximate borders of the main dialects of Khanty; C: the area on the main map. Northern Khanty: O.: Obdorsk Khanty; Ber.: Berezino Khanty; Kaz.: Kazym Khanty; M.O.: the Khanty dialects at the Middle Ob. Southern Khanty: Irt.: Irtysh Khanty (incl. Konda and Demyanka). Eastern Khanty: Sal.: Salym Khanty; Sur.: Surgut Khanty (Pim, Yugan, Trom'yugan, Agan, etc.); V.-Vy.: Vakh and Vasyugan Khanty (mainly after Schmidt *1989;* Martynova *1994; map GIS department, ZBSA).*



Fig. 2. The main dialect areas of Sami. A: extent of the Sami area of settlement (as depicted in most modern surveys, despite the fact that the South Sami language area, for example, extends to the Gulf of Bothnia); B: approximate borders of the main dialects of Sami; C: the area on the main map. Western Sami: S.: South Sami; U.: Ume Sami; Arj.: Arjeplog Sami; L.: Lule Sami, N.: North Sami. Inari Sami: I.: Inari Sami. Eastern Sami: Sk.: Skolt Sami; Akk.: Akkala Sami (extinct in 2003); Kld.: Kildin Sami; T.: Ter Sami (after Rydving *2004b, 358; map GIS department, ZBSA).*

Table 1. Bear ceremonials among the southern Khanty (decades around 1900).

Ceremonial 1: The Hunt

- Ceremony 1: ritual before the hunt
 - rite 1: purification with incense
 - rite 2: prayer to the bear
 - rite 3: the sign of the cross in front of the icons
- Ceremony 2: rituals after the hunt
 - rite 1: (purification) the throwing of snow or earth
 - rite 2: a meal
 - rite 3: the skinning (skinning + utterance of words + breaking and placing of sticks)
- Ceremony 3: rituals on the way home
 - rite 1: telling the bear about the way
- Ceremony 4: rituals on returning to the village
 - rite 1: shooting and greeting
 - rite 2: (purification) sprinkling of bear skin with water and incense
 - rite 3: the person who killed the bear was thrown into the water

Ceremonial 2: The Bear Festival

- Ceremony 1: preparatory rituals
 - rite 1: the bear (skin and head) was taken to the place for the ritual
 - rite 2: the bear was dressed
 - rite 3: food was offered to the bear
- Ceremony 2: the bear festival
 - rite 1: purification with water or snow
 - rite 2: the bear was greeted
 - rite 3: introductory words (the Russians killed you, not we)
 - rites 4–6: a) bear songs
 - b) dancing performances
 - c) short plays
 - rite 7: games to decide when and by whom the next bear was to be killed
- Ceremony 3: concluding the festival
 - rite 1: the bear (skin and head) was taken out
 - (rite 2: a meal in places where bear meat is eaten)

Ceremonial 3: Remembrance Rituals

- rites 1–3: remembrance of the festival on the 9th, 16th, and 38th day after the end of the festival

Table 2. Bear ceremonials among the southern Sami (mid-18th century).

Ceremonial 1: The Hunt

Ceremony 1: rituals before the hunt

(no such rituals documented)

Ceremony 2: rituals after the hunt

rite 1: skiing over the skin

rite 2: a chant was sung

allorite 3: a twig in the bears mouth was pulled three times

or

allorite 3: a spear was aimed at the bear three times

Ceremony 3: rituals on returning to the village

rite 1: a chant was sung

rite 2: (purification) the women spat chewed alder bark on the men and fastened brass rings on their clothes

rite 3: meal

Ceremonial 2: The Bear Feast

Ceremony 1: the bear was collected

rite 1: several chants were sung to the bear

rite 2: prayer to the bear

Ceremony 2: the bear feast

rite 1: the women spat chewed alder bark on the bear

rite 2: the bear was skinned and several chants were sung

rite 3: meal

rite 4: (purification) the hunters washed themselves in lye

rite 5: the men ran around the bear imitating it

rite 6: a game to decide when and by whom the next bear was to be killed

Ceremonial 3: The Burial

rite 1: the bear was buried

The songs and rituals of the Finno-Karelian bear hunt: Gifts, seduction and mimesis in the forest

By Vesa Matteo Piludu

Keywords: Finnish and Karelian bear ceremonialism, ritual hunt, ontology, animism, personalisation of forest and bear, mimesis, ritual seduction

Abstract: In this chapter, I analyse the first stage of Finnish and Karelian bear ceremonialism – the songs and rituals performed during the bear hunt in the forest. First, I present the whole structure of Finno-Karelian ceremonialism and its socio-economic, cultural, and religious backgrounds. I examine the conceptions of the bear and the forest in Finno-Karelian folk belief, emphasising the importance of the personalisation of the forest and the bruin – the bear. The forest was considered a mythical world with a social structure: Its inhabitants, the forest haltias *(guardian spirits) and the bear, were considered as persons of the forest, with whom the hunters tried to establish a complex ritual relationship both during and after the hunt. After this introduction, I will analyse the songs and rituals of the bear hunt, focusing: 1) on offerings to forest spirits, 2) on seductive songs for female forest spirits, 3) on songs to wake up the bear from its hibernation in its den, which were performed before the kill, and 4) on songs that portrayed the kill as an accident and denied the hunters' responsibility. The goal of the ritual communication during the hunt was to please the forest spirits and to avoid the revenge of the bears. My interpretation is based on theoretical reflections: 1) on the personhood of the bear and forest spirits, ontology, animism, and human-environmental ritual relations, and 2) on the status of the hunter as a mimetic suitor and groom of female forest spirits and bears.*

The structure, meaning and objectives of bear ceremonialism in Finland and Karelia

This chapter aims to analyse the first stage of Finnish and Karelian bear ceremonialism – the songs and rituals performed during the bear hunt in the forest. In Finland and Karelia, bear ceremonialism was performed in the winter, during hibernation, and it could be divided into three main parts: 1) songs, incantations and rituals performed in the forest during the bear hunt, 2) songs and rituals of the bear feast in the village, consisting of the ritual consumption of all the meat, fat and organs of the bear, 3) the procession with the bear's skull and bones brought to a sacred pine in the forest, the attachment of the bear's skull to a branch, and the performance of songs for the bear's skull and its soul in order to achieve the regeneration of the animal in its mythical homeland.[1]

1 For an analysis of the songs and rites of the bear feast and the bear skull rituals, see Piludu, this volume, on the Finno-Karelian bear feast and wedding, and on the Finno-Karelian bear skull rituals.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 693–722 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134357

Why did the bear hunt require the performance of complicated rituals and long songs? In Finland and Karelia, the forest was considered a mythic and sacred landscape, which was inhabited and owned by non-human persons, the forest *haltias* (guardian spirits) and their offspring and cattle, the bear and game animals. The forest was considered a sentient and perceptive environment: The spirits and the bear could see, listen to and understand human speech and the hunter's actions. Both the bruin and the forest spirits observed the hunt: If the hunter did not perform respectful rituals and *Bear Songs*, they took a harsh revenge. The hunters could be punished with bad luck in hunting, with bear attacks on cattle or humans, or with a dangerous illness (the forest *nenä* or the bear *viha*). By contrast, if the hunters performed all the rituals and the songs, they would please the forest *haltia*s and the bears, and the forest spirits would "give" them more bears and other game animals in the future. With a successful bear ceremonial, the hunters obtained good luck in all the hunting activities (not only the bear hunt) and the meaningful social status of bear killers (*karhunkaataja*).

In this article, I will introduce the topic by analysing the classic studies of Hallowell and Sarmela on bear ceremonialism, the sources of Finno-Karelian bear ceremonialism, the social and economic background of the rituals and the status of the bear and the forest in Finno-Karelian folk belief. After that, I shall analyse the songs and rituals of the bear hunt, stressing the importance of rites based on reciprocity and communication with forest spirits, in particular the offerings to forest spirits and seductive songs addressed to female forest spirits. When approaching the den, the hunters claimed to communicate with the bruin itself, and I will examine the meanings of: 1) songs to wake up the bear from its hibernation in its den, performed before the kill, and 2) songs that portrayed the kill as an accident and denied the hunters' responsibility. My interpretations are based on theoretical reflections on personhood, ontology, animism, and human-environmental ritual relationships. I will also pay attention to the status of the hunter as a mimetic suitor of female forest spirits and bears, and to the meaning of seduction and marriage in the hunt.

Irving Hallowell and *Bear Ceremonialism in the Northern Hemisphere*

In his monograph *Bear Ceremonialism in the Northern Hemisphere* (Hallowell 1926), the cultural anthropologist Alfred Irving Hallowell[2] developed the concept of bear ceremonialism, covering the whole system of rites, rituals and ceremonies connected with the hunting of the bear. According to the anthropologist Regna Darnell,[3] Hallowell's monograph is the last of the major distributional studies of the Boasian school[4] (Darnell 1977, 14). This school should not be considered a monolithic entity. Franz Boas'[5]

2 Alfred Irving Hallowell (1892–1974) was an influential American cultural anthropologist, archaeologist, and businessman. He was a professor of anthropology at the University of Pennsylvania and an expert in the ontology or animism of Native American and Ojibwa (USA and Canada) cultures. He developed the concept of ontology that is currently used in cultural anthropology as a scientific term regarding animistic beliefs among indigenous peoples. His work on bear ceremonialism was his PhD thesis, published in a special number of *American Anthropologist*.

3 Regna Darnell is an American and Canadian anthropologist who has studied the theories of the members of the Boasian school.

4 Boasian anthropology is considered one of the most influential schools of the discipline. It is named after Professor Franz Boas.

5 Franz Boas (1858–1942) was one of the most famous American anthropologists of all time. He was the founder of the so-called Boasian school of anthropology and the teacher or mentor of many influential American and Canadian anthropologists. The Boasian school is well-known for historical particularism and cultural relativism, which postulated that a culture can only be understood by its own standards and values. However, the school was also involved in diffusionist studies and in research about the Siberian origins of Native American cultural features (such as shamanism or bear ceremonialism, for example).

most renowned students — including Edward Sapir,[6] Robert Harry Lowie,[7] Clark Wissler,[8] Alfred Luis Kroeber[9] and Hallowell — "shared a disciplinary culture" (Darnell 1977, 15) and "certain assumptions about the nature of sociocultural anthropology" (Nash 1977, 7), but they "have often differed from their teacher and from each other" (Lowie 1960, 412). However, Dennison Nash[10] stressed that defining Hallowell as only a Boasian "would be to miss his special genius and his particular contribution to anthropology" (Nash 1977, 7).

Hallowell was fiercely polemical with those scholars who assumed a unilateral theory of religious evolution and considered "animal worship" as an early stage in the religious development of mankind (Hallowell 1926, 14). He openly criticised the evolutionist theories of James George Frazer and Edward Tylor (Hallowell 1926, 13–20). Hallowell joined the anthropologist Alexander Alexandrovich Goldenweiser[11] in his firm critique of the confused abuse of the evolutionist use of the term "totemism" "as a necessary stage in the development of religion" (Goldenweiser 1910/1911, 264; cited in Hallowell 1926, 14; Darnell 1977, 18). Hallowell considered animism to be valid as a general statement about attitudes towards animals, but too general to clarify the differences existing in the folk beliefs and rituals relating to animal species, such as the bear (Hallowell 1926, 15–16). By contrast, Hallowell considered bear ceremonialism to be a concept grounded on ethnographic facts and rituals: It was much more useful to grasp the native point of view (Darnell 1977, 27).

The peculiar status of the bear made a complex ceremonial necessary when it was hunted, and Hallowell remarked on the presence of common features in the bear ceremonies of different Eurasian and Amerindian peoples: 1) the season of the hunt – the end of winter – is connected with hibernation, 2) the belief that the bear sucks his paw for nourishment during hibernation, 3) the use of particular weapons for the bear hunt, 4) the custom of talking or singing to the bear, 5) the idea that the bear is protected by a guardian spirit (Hallowell 1926, 154) and the use of ritual circumlocutions and euphemisms for the bear (instead of using the generic name bear) in order to honour the bruin and avoid its revenge, 6) the rite of awakening the bear and calling it out of the den before the kill, 7) the use of conciliatory speeches, 8) the hunters' justifications or apologies for the bear's death, 9) the presence of elaborate ceremonies after the kill, including the bear feast, characterised by the "eat all (the meat and organs)" ritual, 10) the disposal of the bones – in particular, the bear skull (Hallowell 1926, 145–147, 154). Hallowell sought to find common features in almost all the bear ceremonials but remarked that each of the circumboreal peoples developed culturally specific variations of rituals to deal with these respective features, and he dedicated many sections and subsections of the book to the analysis of these variations in different geographic regions. In this respect, Hallowell was also influenced by the cultural relativism of Franz Boas.

6 Edward Sapir (1884–1939) was one of the most important linguists and anthropologists of his time and a renowned expert on Native American languages.

7 Robert Harry Lowie (1883–1957) was a professor at the University of California (Berkeley) and one of the most important scholars of the native peoples of the American Great Plains and the author of *Primitive Society* (1919).

8 Clark Wissler (1870–1947) was an anthropologist, ethnologist and archaeologist, an expert on the Northern Plains peoples and the founder of the culture area approach.

9 Alfred Luis Kroeber (1876–1960) was a professor of anthropology at the University of California (Berkeley). He was an expert on the myths and religions of the native peoples of California. He made detailed studies of Ishi (1861–1916), the last surviving member of the Yahi people (Northern California).

10 Dennison Nash (1924–2012) was a professor of anthropology, a pioneer of the anthropology of tourism and a prolific scientific writer.

11 Alexander Alexandrovich Goldenweiser (1880–1940) was a Russian-American anthropologist. He is renowned for his critical studies on totemism and primitive religions.

However, Hallowell tried to build a general historical and geographical theory to explain the presence of bear ceremonialism in the whole circumboreal region[12], including Lapland,[13] Finland and Karelia,[14] western Siberia,[15] eastern Siberia,[16] the Ainu culture (Japan)[17] and several Native American cultures of Alaska, Canada and the United States.[18] According to Hallowell, bear ceremonialism was a common feature of an ancient boreal hunting culture – associated with shamanism and the pursuit of reindeer – that originated in Eurasia and passed to North America across the Bering Strait (Hallowell 1926, 153–163). It was a product of an "ancient hunting complex" that was associated with "conservative" customs and rituals present in many different peoples (Hallowell 1926, 33; Darnell 1977, 25). If the cultures were continuous in their geographic distribution, there were possibilities of demonstrating historical connections between them. The Boasian school was strongly interested in the exploration of the cultural relations between the populations of northern Siberia and North America (Hallowell 1926, 160–161; Darnell 1977, 26; Fortescue 1998; Brightman et al. 2014, 9).

Recently, Håkan Rydving,[19] scholar of religions, contested the generality of Hallowell's theory, stressing the structural differences between the Sámi (Lapland or Samiland) and the southern Khanty (western Siberia) bear rituals (Rydving 2010, 42). Rydving suggests the existence of a plurality of bear rituals in contrast to the idea of a "uniform and transcultural" bear ceremonial in North Eurasia (cf. Rydving, this volume [reprint of Rydving 2010]). Hallowell was quite imprecise in his description of the Finnish bear ceremonial, because he used the English translation of Rune 46[20] of the epic poem *Kalevala* (1849) by Elias Lönnrot[21] as his source (Hallowell 1926, 33). The language barrier

12 There have been few comparative articles, chapters, monographs and books on bear ceremonialism after Hallowell; see Campbell 1988, 54, 147–155; Lajoux 1996; Spagna 1998; Pentikäinen 2005; 2006; 2007, Pastoureau 2011.

13 On Sámi bear ceremonialism, see Fjellström 1755; Holmberg 1915, 45–52; Itkonen 1937; 1948; Edsman 1953; 1956; 1975; 1994; Schefferus 1971; Laestadius 2002, 180–196; Pulkkinen 2005, 33–35; Rydving 2010, reprinted, this volume; Pentikäinen 2015; 2019.

14 On Finnish and Karelian bear ceremonialism, see Appelgren 1885; Sirelius 1919, 37–40; Nirvi 1944; Karhu 1947; Virtaranta 1958, 308–328; Edsman 1953; 1958; 1965; 1975; 1994; Kuusi 1963, 41–51; Vilkuna 1965; Haavio 1967, 1–41; Sarmela 1972; 1982; 1983; 1991; 2006a; 2006b, 70–94; 2009, 79–107; Ilomäki 1986; 1989; 2002; 2014a, 84–89; 2014b; Honko 1993; Tarkka 1994; 1998; 2005, 256–299; 2013, 327–381; 2014; Uusitalo 1997; Inha 1999, 349–350, 352–355; Klemettinen 2002; Miettinen 2006; Partanen 2006; Pentikäinen 2006; 2014; Piludu 2006; 2009; 2015; 2019a; 2019b; 2022; Pulkkinen/Sammelkivi 2006; Rebourcet 2006; Salo 2006; 2012, 33–73; Lehikoinen 2007, 248–259; 2009, 168–176; Partanen/Piludu 2007; Kailo 2008; Krohn 2008, 146–164; Siikala 2008, 140–144; 2016, 380–389; Meriluoto-Jaakkola 2010a; 2010b; Pulkkinen 2014, 212–229; Pulkkinen/Lindfors 2016, 106–120; Ahola 2020.

15 On Ob-Ugrian bear ceremonialism, see Ahlqvist 1881; Kannisto 1906a; 1906b; 1907; 1933; 1938a; 1938b; 1939a; 1939b; Karjalainen 1914; 1918, 512–545; Sirelius 1929; Kannisto et al. 1958; Kálmán 1968; Cushing 1977; Bartens 1986; Schmidt 1989; Lindrop 1998; Patkanov 1999; Kulemzin/Lukina 2006, 129–131; Juslin 2007; Pentikäinen 2007, 31–42; Soldatova 2008, 145–147; Rydving 2010, reprinted, this volume; Wiget/Babalaeva 2010, 133–140; 2022; Siikala/Ulyashev 2011, 91–96; Piludu 2022.

16 On eastern Siberian, Tungus and Nivkh bear ceremonialism, see Dyrenkova 1930; Zolotarev 1937; Paproth 1976; Kwon 1999; Janhunen 2003; Taksami 2006.

17 On the Ainu bear ceremonialism, see Batchelor 1901, 383–496; 1932, 37–44; Irimoto 1996; 2014; Akino 1999, 248–255; Maraini 2013.

18 On North American bear ceremonialism, see Hallowell 1926; Tanner 1979, 145–181; Nelson 1983; Rockwell 1991; Comba 1996; 2015; 2019; Spagna 1998; Hämäläinen 2011.

19 Håkan Rydving (born in 1953) is a Swedish linguist and historian of religions. He is Professor of History of Religions at the University of Bergen (Norway) and an expert on Sámi religions and languages.

20 Lönnrot composed Rune 46 of the *Kalevala* (Lönnrot 2012) using several *Bear Songs*, many of them from Viena Karelia. The *Kalevala* is a literary work strongly based on folk songs, but Lönnrot edited and changed many details of the original *Bear Songs*. The material is adapted to the epic plot; the singer is not a common hunter but a hero, Väinämöinen. See Rebourcet 2006; Piludu 2019a, 29–31.

21 Elias Lönnrot (1802–1884) is probably the most renowned Finnish scholar, ethnographer, poet, professor, and writer. His literary masterpiece is the *Kalevala* (1849), his epic poem that is based on edited versions of folk songs and incantations collected in the field. Other significant books are the *Kanteletar* (1835), a collection of edited lyric Finnic and Karelian folksongs, and the first and shorter version of his poem, the *Old Kalevala* (1835). As the *Kalevala* was the first

denied Hallowell – and other influential foreign scholars after him – access to the original *Bear Songs* in Finnish and Karelian, so they used a literary reconstruction as an ethnographic source (see Piludu 2019a, 29–31). For this reason, Finnish scholars have rarely referred to Hallowell's book in their studies on Finnish bear ceremonials.

However, Hallowell's monograph remains a classic text on bear ceremonialism, especially if we contextualise it as a very interesting product of the American anthropologic research of the time (Darnell 1977, 22). The Boasian school shared with the evolutionist school a deep interest in the historical development of traditions, but it studied this by "focusing on cultural variability" (Willerslev 2007, 145; Miller/Mathé 1997). Hallowell also wrote about the processes of modification, differentiation and assimilation of bear ceremonial features that were caused by local cultures and social organisations (Hallowell 1926, 162–163). Hallowell stressed that "each culture exhibits its own peculiar combination of features which cannot be deduced from any general principle of association" (Hallowell 1926, 18). Over time, some original traits were modified, and details and features of bear rituals could differ from one culture to another (Hallowell 1926, 162).

Three methods were used by Hallowell: 1) the ethnographic analysis of bear rituals that considered the point of view of a particular circumboreal culture, 2) the use of a comparative framework that brings out similarities and differences in the features of bear ceremonials of different cultures (Hallowell 1926, 20), and 3) the elaboration of a theory about the origins and diffusion of the bear ceremonial. Another important merit of Hallowell is that he connected bear ceremonialism with a set of important ontological problems. He considered the study of bear ceremonialism as a way of answering the theoretical problem of how human groups are related to the environment and to animals (Darnell 1977, 21). He stressed that: a) bears and other animals are believed to have the "same sort of animating agent which man possesses" and they are supposed to have linguistic abilities, understand human speech and actions and have specific forms of family or social organisation (Hallowell 1926, 7), b) animals are not all equal; some beings – such as the bear – have a higher status or rank because they have stronger "powers" or they have a deep relationship with powerful spirits (Hallowell 1926, 8, 17), c) bears are protected by a guardian or owner spirit governing the supply of certain game animals; the bear ceremonials honoured not only the bear, but they also propitiated this supernatural agent (Hallowell 1926, 145). Hallowell emphasised that the bear rituals should always be connected to a larger framework of beliefs about the environment, the animals and the guardian spirits. Hallowell also elaborated these theories on animal personhood and guardian spirits later, in his influential article and book on Ojibwa[22] ontology (Hallowell 1960; 1974). These ontological considerations are of fundamental importance for my analysis of the Finno-Karelian bear ceremonials, as we will see in later sections of this chapter: In the Finno-Karelian *Bear Song*, communication with the forest *haltias* (guardian spirits) of the bruin was of fundamental importance.

The sources of Finno-Karelian bear ceremonialism

In the 19th century Finnish folklore collectors transcribed a large number of *Bear Songs* and informants' descriptions of the rituals performed in all the phases of the ceremonialism. At that time, the bear ceremonial was a vanishing tradition, and the majority of the songs and information were collected

important literary publication in the Finnish language, he is considered a founder of Finnish literature (Kallio 1921; Anttila 1931a; 1931b; 1962; Haavio 1971).

22 The Ojibwa or Ojibwe (Chippewa) are a Native American people living in Canada and on the Northern Plains of the Midwestern United States.

in isolated villages in eastern and northern regions. The *Bear Songs* were performed using the so-called Kalevala metre. Kalevalaic singing included ritual, epic and lyric folk genres.[23]

The fieldwork continued at the beginning of the 20th century, but the collectors searched for old hunters as informants; people who were able to remember or still perform the rituals of the 19th century, recall the songs of their fathers and grandfathers and describe the bear ceremonials that were carried out in the past (Piludu 2019a, 24–27).

The main corpus of sources I analysed for my study consists of 288 *Bear Songs* published in different volumes of the collection *Suomen Kansan Vanhat Runot* (SKVR), which are divided into old Finnish and Karelian regions and folklore genres: North Ostrobothnia (including the actual region of Kainuu, SKVR XII2/6458–6575),[24] Viena Karelia (Russia; SKVR I4/1189–1267), Savo or Savonia (SKVR VI2/4883–4926), Border and Ladoga Karelia (Russia) and Finnish North Karelia (SKVR VII5/3364–3403),[25] the regions of the Forest Finns in central Scandinavia (Sweden and Norway; SKVR VII5 Metsäsuomalaiset/346–350),[26] Häme or Tavastia (SKVR IX4/1096 and IX4/1101).

The textual sources for Finnish bear ceremonialism predating the 19th century are scarce and quite short, with the exception of a rich and long *Bear Song* with comments describing almost all the phases of the ceremonial: *The Text of Viitasaari* (SKVR IX4/1096; Viitasaari, central Finland; exact date unknown, edited after 1750). One of the oldest *Bear Songs* is the *Cantio Ursina* (SKVR IX4/1101, 6, Rautalampi, North Savo, Finland, 1675), which is a prayer to the female guardian forest spirits, Hongas (Hongotar) and Tapiatar.

The first written document on the Finnish bear ceremonials is a very brief description of the drinking from the bear skull, the last rite that closed the whole ritual system. The account was included in a sermon given by the bishop of Finland, Isaak Rothovius, for the inauguration of the *Regia Academia Åboensis*, the first university in Finland, on July 15, 1640. The bishop hoped that the Academia could be an instrument to erase these "rude" and "pagan" rituals from the country. The oldest sources are from the actual regions of central Finland, North Savo and southern Finland (Turku), but the bishop refers to bear ceremonials performed throughout the whole country.

The most evident division in the geographic distribution of the *Bear Songs* is that, in the 19th century, almost no *Bear Songs* were collected in western and southern Finland or from Ingria (Russia and Estonia), the Karelian Isthmus (Russia) and Olonets Karelia (Russia). Bear ceremonialism seems to have disappeared more rapidly in those western and southern regions with more advanced agri-

23 The terms Kalevala metre and Kalevalaic singing are related to the songs used by Elias Lönnrot to compose his epic poem, the *Kalevala* (1835; 1849). Kalevalaic singing was, and is, used in Finland, Karelia, Ingria and Estonia and by the Votes and Veps. On the Kalevala metre, see Piludu 2019a, 34–36; cf. Leino 1986.

24 SKVR indicates a reference to a song or incantation of the collection *Suomen Kansan Vanhat Runot* (Ancient Songs of the Finnish People). In this chapter, SKVR sources are indicated by the number of the volume (e.g. SKVR XII2), followed by the number of the song (/6573) and the number of lines (1–2).

25 The definition of the Karelian regions in Finland and Russia varied throughout history, and they can be quite confusing for foreign readers. The northern dialect of the Karelian language was, and is, spoken in Viena or Dvina Karelia (at a time part of the Government of Archangelgorod of the Russian Empire, nowadays northwestern Russia, near the Finnish border). By contrast, the inhabitants of Finnish North Karelia spoke, and still speak, a Finnish Savonian dialect. Savonian dialects were, and are, also spoken in Kainuu (North Ostrobothnia in the SKVR sources), parts of central Finland, and among the Forest Finns in central Scandinavia. To simplify the linguistic question, most of the *Bear Songs* were sung in Savonian dialects and in the Nordic dialect of the Karelian language. Although Karelian Nordic and Savonian dialects are nowadays considered different languages, the syntax of the Savonian and Karelian *Bear Songs* was very similar. Among other dialects, the northern Finnish dialect was used (*Peräpohjolan murre* in Finnish), spoken for example in the territories of Kuusamo. The inhabitants of Border Karelia (*Raja-Karjala*, present-day Russia) spoke the southern dialect of the Karelian language and those of Ladoga Karelia (present-day Russia) spoke the southeastern dialect of Finnish (*kakkoismurre* in Finnish). See Fig. 1 (cf. Grünthal 2020, 6).

26 From 1580 to 1640, rural Savonians migrated from Savo and central Finland to the forests of western Sweden and southeastern Norway (Virtanen/DuBois 2000; 51; Metsäkylä 2014, 13). The Forest Finns lived in quite an isolated area and preserved their Savonian language and culture for a long time (Metsäkylä 2014, 13–17; see Keinänen, this volume).

cultural systems, cattle breeding, infrastructures, and churches. Kalevalaic singing, too, disappeared more rapidly in the southern and western areas, due to the multifaceted processes of modernisation.

In the 19th century, the heartland of the *Bear Songs* was quite a large geographic area around the actual border between Russia and Finland, extending southwards to North Savo, South Savo and North Karelia (Finland), westwards to central Finland and northern Ostrobothnia, northward to Suomussalmi (Kainuu, Finland), Kuusamo (northern Ostrobothnia, Finland) and southern Lapland (Finland) and eastward toward North Karelia (Finland) and Viena Karelia (Russia). In Sweden and Norway, the Forest Finns, descendent of Savonians, also sang *Bear Songs* and performed bear ceremonials. Many villages of these regions were quite isolated from cities and surrounded by huge forests; therefore, hunting traditions survived for a long time.

According to the folklorist Kaarle Krohn[27] the Viena Karelian *Bear Songs* originated in Finland (Krohn 2008, 156–157, 161–162; see Fig. 1), which follows Krohn's theories about the local diffusion of Kalevalaic songs, or their themes, from west to east and from south to north. This approach also had a nationalistic background: The scholar emphasised the Finnishness of the Karelian material, collected outside the Finnish border. He augmented his hypothesis by stating that, in the Viena Karelian songs, the knife for skinning the bear was made in Estonia, Germany, or Stockholm (Krohn 2008, 156–157) and some words were loans from western Finnish dialects.

The Viena Karelian villages from which the folk collectors transcribed *Bear Songs* were situated near to the Finnish border. It is possible to suppose that, in the past, some Finnish families emigrated from Finland to Viena Karelia and brought the tradition of the bear ceremonials with them.[28]

Viena Karelians also travelled in Finland. In the 19th century, when the Viena Karelian material was collected, Karelians were not completely isolated; they were informed about the major cities and countries of the Baltic Sea. Karelian men often travelled in Finland as wandering peddlers, as the border was open (the Autonomous Grand Duchy of Finland was part of the Russian Empire).

The structures and the main topics of the Finnish and Karelian *Bear Songs* are similar. However, almost every Karelian and Finnish singer added or erased some lines or words, and there are interesting poetic variations in each song.

Krohn also wrote that the Greek Orthodox Karelians did not eat bear meat, and for the same reason in the eastern part of Finnish Karelia (in Ilomantsi, an Orthodox parish) the people did not sing *Bear Songs* or perform bear ceremonials or rituals (Krohn 2008, 162). However, with this statement, he contradicted himself. A few pages before, Krohn described in detail the Viena Karelian *Bear Songs* (Krohn 2008, 156–161), including Iivana Malinen's song, performed while eating bear meat (Krohn 2008, 156; SKVR/1245a). He even admitted that Viena Karelian *Bear Songs* were often longer and richer than Finnish ones: The Karelians borrowed lines from wedding songs, other hunting songs and other genres, "embellishing" the *Bear Songs* (Krohn 2008, 161).

I agree that the Orthodox faith and in general the process of modernisation could have changed the Karelian traditions: Some Karelians (but not all of them) did not eat the bear meat or they

27 Kaarle Krohn (1883–1933) was one of the most important Finnish folklorists and a founder of the Finnish geographic-historic method; he was the son of another influential folklorist, Julius Krohn. Kaarle Krohn's ideas about the historical origins of the Kalevalaic songs varied during his career. At the beginning, he underscored the influence of hagiography on Finnish incantations, postulating the theory about the medieval origins of Kalevalaic songs. Later, focusing on Finnish epic songs, he stressed that their origins dated back to the Viking era and that they could be based on real, historical facts. Krohn is also famous for his research on folk tales, published in German for an international audience (Hautala 1954, 213–277; Eräjärvi 1963; Pentikäinen 1971).

28 The family of the Viena Karelian singer and hunter Moiśśeińi Kuśma (Ahonen, Latvajärvi) came from a village on the shores of the River Oulujoki (Finland, see SKVR I4/1226). However, growing up in Viena Karelia, the singers were fully integrated into the rich singing culture of Karelian villages, and they spoke the northern dialect of the Karelian language, not Finnish dialects (Kaukonen 1984). Other families of Viena Karelian singers came from Finland; for a detailed description of the geographic origins of the most important families of Viena Karelia, see Kuzmin 2014, 327–337.

refused to perform the whole ceremonial. A similar process happened in Finland with the efforts of the Lutheran church to erase the bear ceremonies from the country. However, in Viena Karelian villages and parishes near the Finnish border, the folklore collectors transcribed some of the longest and most complete *Bear Songs* from skilled *runolaulajas* (singers), including the famous Arhippa Perttunen, Iivana Malinen and Jyrkki Malinen. This is not a surprise, as the singers of these Viena Karelian villages also remembered the longest and most important Kalevalaic epic songs and incantations used by Elias Lönnrot to compose his epic poem, the *Kalevala* (Lönnrot 1985; 2012; see Piludu 2019a, 29–31). For all these reasons, the material from Viena Karelia is particularly important in the three chapters I have written for this book.

The reconstruction of the Finnish bear ceremonialism eras according to Matti Sarmela

In his theorical reconstruction of the historical development of the Finnish bear ceremonials, the anthropologist Matti Sarmela[29] argues that it can be divided into three eras. According to him, the first era comprised the prehistoric Finnish culture, marked by shamanism,[30] totemism[31] and a hunter-gatherer economy. Sarmela argues that the Finnish ritual of the bear skull should relate to the natural environment of the bear; the skull and all the other bones should be returned to the forest to ensure the rebirth or regeneration of the animal in the original birthland (Sarmela 1991, 221–222). According to Sarmela, the myth of *The Birth of the Bear in the Sky* (which emphasises the regeneration or resurrection of the animal) relates to this first era.[32] In the second era the rituals evolved in a different direction: The old beliefs did not work anymore because the ecological environment changed when the Finnish people adopted agriculture (Sarmela 1991, 224). During the Iron Age, with the development of slash-and-burn agriculture, the bear became the "enemy" of the people, because it killed the cattle in the forest pastures or destroyed the farmland produced by means of the slash-and-burn technique (Sarmela 1991, 230). Sarmela stresses that the most important religious specialist of the Finnish archaic agrarian villages was no longer the shaman, but the *tietäjä*, a ritual specialist who did not travel to other worlds or dimensions in search of lost souls (like the shaman) but expelled "the sorcerer's arrows or darts" *(noidan nuolet*) or sickness from the body of an ill person. The environment in the age of the *tietäjä* was divided into two worlds, the cultivated landscape and uncultivated nature, which represented a kind of anti-world (Sarmela 1991, 229). Sarmela states that the most important goal of the *tietäjä* was to protect the cattle and the crops in the fields from

29 Matti Sarmela (born in 1937) is one of the most influential Finnish professors of cultural and social anthropology. He wrote quite intensely on Finnish traditions and bear ceremonialism. Although I criticise some of his theories in this chapter, I warmly suggest that readers interested in Finnish bear ceremonialism read all his chapters and articles on the topic (Sarmela 1982; 1983; 1991; 1994). He is also an expert on northern Thai folk cultures.

30 The use of the terms "shaman" and "shamanism" is quite problematic when they are used to define Finnish and Karelian religions in prehistory. "Shaman" is a Tungusic word used to define the local ritual trance specialist of eastern Siberian peoples. In anthropological literature, the words "shaman" and "shamanism" have been broadly used to define almost every kind of ritual specialist that uses trance technique around the world (from Siberia to Africa, from South Asia to Amazonia), regardless of the evident differences between shamanic traditions from contemporary South Korea to those of western Siberia in the 19th century. However, in recent years, there has been a tendency to use emic terminology to define local trance specialists (for example *noaiddi* in Sámi) and to emphasise the peculiarities of each trance tradition. In Finland and Karelia, the name of the trance specialist is *tietäjä* (sage, the one-who-knows) and most of the information about the traditions and incantations of the *tietäjäs* was collected in the 18th, 19th, and 20th centuries. Several Finnish scholars, including Anna-Leena Siikala, argue that the *tietäjä* tradition evolved from an older form of Nordic shamanism, more like the *noaiddi* tradition or the Siberian ones (Siikala 1992; 2002).

31 On totemism and Sarmela's totemic theory, see Piludu, this volume, on the Finno-Karelian bear feast and wedding.

32 On the *Birth of the Bear in the Sky*, see Piludu, this volume, on the Finno-Karelian bear feast and wedding; Piludu 2022.

bears.[33] The *tietäjä* asked forest *haltias* (guardian spirits) to control the bears in order to avoid a bear attack on cattle.

According to Sarmela's theory, the third era was the "age of the countryman," which developed during the Middle Ages. This period was marked by the religious dominance of the Christian faith. The Catholic and Orthodox cults of the saints influenced the rituals of the *tietäjäs*; in their incantations, the saints took the place of the earlier forest *haltias* (guardian spirits) in protecting and controlling the bear (Sarmela 1991, 236). The *Birth of the Bear* from wool thrown by a saint into (river or sea) water represents the main myth of this era; according to Sarmela, the bear was not considered sacred anymore, but as a puppet fully dominated by the saints.

Although Sarmela's reconstruction contains many useful observations and interpretations, the differences between the three eras are too sharp. Sarmela does not negate the influence of agriculture or Christian beliefs on the Finnish bear lore; however, he has a tendency to idealise the hunter-gather traditions (proposing them as a model of ecological sustainability) and to consider the influence of agriculture, Christianity and cattle herding on bear lore as a negative degeneration of the original bear ceremonial. The folklorist Lotte Tarkka has noted that for many decades Finnish scholars focused on the "ultimate origins of the song" (Tarkka 2013, 80) and that for them the "true" and "authentic" text of a song was supposed to be the most ancient or archaic part of it. Sarmela also has this tendency; in his interpretation, whatever deals with agriculture or the *tietäjäs* has a negative connotation and whatever is archaic is fully idealised.

Another problem with Sarmela's interpretation is that he considers each era as completely separated from the other, denying the possibility of communication and syncretism between the traditions of hunters and cattle herders. Agriculture, cattle herding, and the Christian faith certainly reduced the areas where bear ceremonialism was performed, but they did not completely or abruptly erase or degenerate the sacred status of the bear and its *haltias* (guardian spirits).

The folklorist Anna-Leena Siikala[34] has pointed out that, in the Finnic Kalevalaic songs and incantations, the fusion of different historical elements often acquired a significant contextual and ritual meaning; new historical layers rarely wiped away the old strata of meaning (Siikala 1994, 94). I agree with her theory, which stresses that changes in tradition were not mechanical events but complex processes in which renewing and conserving tendencies could act at the same time, influencing each other. In the Finno-Karelian folk tradition, ritual actors tended to "accumulate" supernatural helpers, mobilising quite a variegate group of beings that belonged to a historically stratified tradition. The hunters and cattle holders asked for the help of all the powerful spirits, divinities and Orthodox saints that could help them in preventing a bear attack.

The socio-economic background: The protection of the cattle and the values associated with the bear hunt

The Finnish and Karelian hunters did not perceive the forest as a "homogeneous natural environment" (Tarkka 2013, 327), as do contemporary urban dwellers. The anthropologist Rane Willers-

33 This is a simplification, if not a banalisation, of the many roles of the *tietäjä*. He or she healed sick persons and helped the hunters, the fishermen, the farmers and the cattle-herders in the case of difficulties. In Karelia, a particular *tietäjä*, the *patvaska,* protected the bridal couple and the families from the malevolent magic of *noidat* (sorcerers) and *kateet* (envious people) (Siikala 2002). The culture of the *tietäjä* deeply influenced bear ceremonialism; many famous Karelian and Savonian bear-killers were believed to be powerful *tietäjäs* and the bear, too, was believed to have the *tietäjä*'s skill.

34 Anna-Leena Siikala (1943–2016) was a Finnish professor of Folklore Studies. She is renowned for her studies on Siberian shamanism, on Finnish *tietäjäs* (sages) and on Finnic and Uralic mythologies.

lev[35] stresses that a hunter's understanding of the world is not based on an abstract contemplation of an objective "nature," but "emerges from concrete context of practical engagement" (Willerslev 2007, 94). The hunter's myths and rituals are strictly bound with practical activities carried out in certain environments (Willerslev 2007, 95). Willerslev's theoretical background is clearly influenced by the phenomenological and existential philosophy of Martin Heidegger, which deeply inspired the anthropologist Tim Ingold[36] and his school of British social anthropology. The latter scholar defines the environment of indigenous people as a "taskscape", a place to accomplish a variety of different works: "As the activities that comprise the 'taskscape' are unending, the landscape is never complete: neither 'built' nor 'unbuilt'. It is perpetually under construction" (Ingold 1993, 163). I tend to agree with them: The Finno-Karelian forest was indeed a "taskscape", but the conceptualisation of the forest in Finland and Karelia was both influenced by everyday activities (synchronic aspect) and by a complex ontological worldview based on a long and ancient tradition, which was preserved well by the *Bear Songs* (diachronic aspect).

The folklorist Lotte Tarkka[37] emphasises that, in Viena Karelia (Russia), the division of labour was gendered (Tarkka 2013, 330). This provoked a gendered separation of the taskscapes; the work in the houses, the cattle sheds and around the farm were the dominion of women and the household's mistress, while the forest and travelling outside the village were the environments of male activities, like hunting and logging (Tarkka 1998, 93). In Karelia and in Finland, there were various exceptions from the gendered taskscapes. Young women or girls often followed the cattle to the summer pastures, which were glades located in the forest or near it, or they went into the forest to pick berries and mushrooms; boys and young men could also work as cattle herders in the summertime and do several agricultural tasks (Piludu 2019a, 58). Adult men could help women in several rural activities and took care of horses.

The Karelian women did not breed cows for meat production, as the cows owned by a family were few: Dairy products were important food and a source of fat, while cattle also produced manure for the fields (Tarkka 1998, 93). In this economic context, the bear hunt was performed to protect the cattle, "since bears took a heavy toll on the cattle which were vital to the livelihood of small farms" (Tarkka 1998, 93). Tarkka's statements are also valid for the rural culture of eastern, northern and central Finland; in the summer, it was vital to protect the cows from bears. In other words, the Finno-Karelian bear ceremonialism had different historical layers; the archaic strata of the hunting rituals were influenced by the necessities of agriculture and cattle breeding.

Bears could also kill or injure horses, which were important animals for transportation, travelling and ploughing. Cattle and horses also represented the wealth of the household. According to the anthropologist Matti Sarmela, after the development of agriculture the bear became the "enemy of humankind" because it killed the cattle in the forest pastures (Sarmela 1991, 230). This statement fits well for the wolves, which were heavily demonised by rural communities for their frequent attacks on cattle (Pulliainen 1974, 16–85). However, the status of the bear, which is an omnivorous animal and not as aggressive a predator as the wolf, was much more elaborate.

35 Rane Willerslev (born in 1971) is a Danish anthropologist and a renowned expert on Yukhagir hunting rituals and culture. He is the director of the Danish National Museum. His theoretical approach includes innovative reflections about animism, ontology, and mimesis in hunting rituals.

36 Tim Ingold (born in 1948) is a British social anthropologist and an expert on the Skolt Sámi of Finland. He is interested in the historical evolution of reindeer pastoral culture and human-animal relations; his approach is strongly influenced by philosophical phenomenology, especially the thoughts of Martin Heidegger.

37 Lotte Tarkka (born in 1963) is Professor of Folklore Studies at the University of Helsinki. She is an expert on the Kalevalaic singing tradition in the Parish of Vuokkiniemi (Viena Karelia) and on bear ceremonialism and forest symbolism in Viena Karelia.

In many Karelian and Finnish villages, the bear was still considered an innocent animal of the forest, protected by powerful forest *haltias.* If the bruin attacked the cattle, an envious neighbour or a sorcerer who had bewitched the animal was held to be culpable *(*Piludu 2019a, 68–70). The folk believed that cattle luck *(karjan onni)*, like other forms of "luck" (for example "hunting luck") was present only in a finite quantity; someone's luck could increase only by diminishing the "luck" of their neighbours through sorcery (Stark 2006, 46). Tarkka stresses that conflict between people and bears reflected an internal struggle present in human society: The contradiction between the bear's innocence and the havoc it created was resolved by framing it in terms of "aggression within the human sphere" (Tarkka 2013, 332). Although dangerous, the bear remained sacred *(pyhä)* and innocent, "clean" (*puhdas*): Its killing was considered acceptable only if the hunters performed a huge number of ritual songs and rituals to please the bear itself and the forest spirits.

Finally, the hunt was a marginal activity in the complex economic system (fishing was more important as a source of protein), but the social values associated with it were particularly high. Tarkka stresses that the bear kill was "a proof of masculine prowess" (Tarkka 2013, 347) as well as courage, requiring successful cooperation between the male members of the hunting group and the ability to communicate with forest spirits. The hunters acquired the honourable title of "bear-killers" (*karhunkaataja)*. In the wedding songs, the ideal husband was portrayed as a manly hunter and a brave traveller (Tarkka 2013, 337): A bear-killer was a model of manhood, the groom "par excellence". In the *Bear Songs,* the hunt is deeply intertwined with wedding metaphors; the bear can be described as a bride by hunters or as a groom by the women of the villages.

The personalisation of the *haltias*, the sacred forest and the bear

The forest was not only a well-known taskscape and background of everyday activities; it was considered as an otherworld (Nadasdy 2021) or a mythic landscape, called Metsola, Tapiola or Pohjola in the *Bear Songs*. The forest and the forest *haltias* in general were defined with the adjective *pyhä* ("sacred"; Tarkka 2013, 329). The ethnologist Laura Stark[38] stresses that in folk religion the sacred "is defined by the local community rather than by a religious institution" (Stark 2002, 30). It seems that the adjective *pyhä* did not have a Christian origin, even if the word was also used in a Christian sense (Anttonen 1994, 26). The scholar of religions Veikko Anttonen[39] and the folklorist Henni Ilomäki[40] state that the *pyhä* category is generally connected with borders between "inside" and "outside" dimensions, or the "own" and "other" or "common" areas, stressing that *pyhä* could be concretely manifested in elements of landscapes (Anttonen 1992; 1994, 27; 1996, 76–151; Ilomäki 2014b, 121). The forest was a mythical world inhabited by *haltias*, but it was also the immediate and real-world hunting ground. The folklorist Frog notices that the Finnish and Karelian sacred agents, the *haltias*, did not occupy an otherworld or a mythic world completely separate from the mundane or human word (Frog 2009, 9–10), such as the Christian heaven or hell. They inhabited other parallel worlds also located in the physical environment: "The seen world was animated and affected by the unseen world and its inhabitants" (Frog 2009, 9). The folklorist Anna-Leena Siikala explains that, in

38 Laura Stark (previously Stark-Arola, born in 1966) is a Finnish-American ethnologist and Professor of Ethnology at the University of Jyväskylä. She has written several influential books on female magic rituals and incantations in Orthodox Karelia.

39 Veikko Anttonen (born in 1948) is Professor Emeritus of the Study of Religions at the University of Turku. He is an expert on Finnish folk beliefs, and he is well known for his theories about the historical evolution of the Finnish concept of *pyhä* (sacred).

40 Henni Ilomäki (born in 1941) is a Finnish folklorist and an expert on Finnish and Karelian incantations and wedding songs.

Finno-Karelian folk belief, the separation between the otherworld and "this" world was not radical (Siikala 1992, 145; Tarkka 2013, 300).

Lotte Tarkka notes that the otherworldly forest was conceived as a family, village and society that resembled the human world; it was a "sociomorphic" landscape, an approximate mirror-image of "our" world (Tarkka 2013, 330). The forest *haltias* were anthropomorphic beings and people, carrying on a life that was similar to that of humans. The forest had a basic, familiar and hierarchic structure, which resembled that of the human household. The *haltias* had epithets that indicated their gender, age and social status (Tarkka 1998, 96–97; Stark 2002, 51). The forest world was considered as another dimension that resembled the human world.

The most important male *haltia* was Tapio, the master of the forest, who had the power to provide game animals to the hunter or to deny him the quarry (Siikala 2016, 376). Tapio was both an anthropomorphic spirit and a name for the forest and the bear (SKVR I4/1266, 15; Krohn 2008, 107). This partial homology between the master and his dominion signified that the forest itself could be considered an intentional agent (Tarkka 2013, 330). Tapio was also a shapeshifter, able to transform himself into a bear or another animal and he had a wife, whose name varied in the hunting songs: Mielikki, mistress of the forest, Mielus, Hongotar, Tapiotar and Katajatar (Siikala 2016, 376). The forest mistress had many "forest girls" (*metsän tytöt*), maidens or servants, at her service: They were usually portrayed as attractive and powerful female *haltias*, and they were considered the guardians of bears. In certain *Bear Songs,* the hunters syncretised *haltias* with Christian saints (especially in Orthodox Karelia): Tapio was syncretised with St George (*Jyrki*) and Mielikki with St Anna (*Annikki*).[41]

The *haltias* were also "more-than-human" persons, in the sense that they were much more powerful than humans: They could be invisible, become as tall as the trees, appear in dreams, cause illnesses or madness, protect or bestow game animals, steal cows, make bears or wolves furious, make persons disappear or get lost in the forest.

The bear was particularly sacred because it had a deep relationship with the forest *haltias* (see Fig. 2). Belief in the existence of anthropomorphic *haltias* made the personification of the forest and the bear itself possible (Tarkka 2013, 330). The bruin was considered the offspring of a female *haltia*, and sometimes of Tapio himself (Piludu 2019a, 120–122). One of the most typical circumlocutions for the bear was "forest" (*metsä*, *tapio*), a metonymy or synecdoche that indicates the deep identification between the animal, its environment, and the forest master (Tapio). The bear could even share with its master, Tapio, the honourable title of "King of the Forest" (*Metän kuningas*; SKVR XII2/6481:1*).* As an alternative, the bear was often considered the cattle, the dog or the "pet" of the forest mistress or forest maidens (Tarkka 2005, 259). The concept of the game animals as the "cattle" or "pets" of forest spirits is present in several hunting cultures, such as the Mistassini Cree (Canada), who also performed bear ceremonials (Tanner 1979, 139). The singer Samppa Riiko emphasised that "the bear is the favourite cattle of the forest maids" (*Karhu on metsän piikojen lempi karjaa*; SKVR I4/1490, Tuhkala, Viena Karelia, Russia, 1888). The term "favourite" stressed a relationship of affection and tenderness.

What made the Finno-Karelian conception of the bear even more complex is that the animal was also considered to be a humanlike being with human origins. In Jyskyjärvi (Viena Karelia, Russia), the people believed that the similarity of the bone structures of the bear paw and the human hand demonstrated that the bear was a bewitched person transformed into a bear (SKS KRA Niemi, O. 532, 1936).[42] Some sorcerers (*noidat*) were shapeshifters, able to transform themselves into bears in

41 On popular forms of syncretism between *haltia*s and saints, see Piludu 2019a, 123–129. The Orthodox and Lutheran churches fought against vernacular syncretism in Karelia and Finland for several centuries, but with limited success.

42 Sources from the SKS KRA (Archive of Folk Poetry of the Finnish Literature Society) are mentioned here, indicating: the name of the collector; the number of his manuscript and its year; the village and its parish; the name of the informant and, sometimes, basic information about him (age and profession).

order to roam the forest, sleep all winter or kill the cattle of their neighbours (Piludu 2019a, 66–68). The bear was an anomalous being; it was difficult to categorise as it was a being "in between" humanity and the world of the forest spirits.

The bear ceremonials were based on communication and reciprocity with the animals and the forest *haltias*, who were conceived of as persons (Tarkka 2013, 71). The recent anthropological debate on animism, perspectivism and ontology analyses the personhood of animals and spirits in folk and indigenous belief systems. Viveiros De Castro[43] stresses that, in Amazonia, too, non-human persons – animals and spirits – had a soul and a perceptive, appetitive, and cognitive disposition. They saw themselves as persons, and they had social relations that could be both reflexive and reciprocal (Viveiros de Castro 2009; Brightman et al. 2014, 2).

In the Finno-Karelian hunting cultures, there were similar ideas about the non-human or more-than-human persons of the forestland: bears and *haltias* were considered agents with will, intentions, and desires, and they interpreted the actions and the words of the hunters from their own point of view – their own perspective. Bruins and *haltias* were considered sentient persons with emotions, agency, a moral code, and expectations (Stark 2002, 23). The bear was supposed to have a soul (see Fig. 3), and it was considered a skilled *tietäjä* (seer). The hunters (Fig. 4) were expected to take the forest persons (*haltias* and bears) into consideration and to build a ritual relationship of reciprocity with them. The Finno-Karelian hunters developed a complex ritual relationship with the bear and the forest *haltias* as independent and competent persons (Figs. 5–6).

The bear and *haltias* were believed to be powerful beings with extraordinary senses of sight and hearing. They could see from a distance the actions of the hunters in the forest or the women in the villages, and they could hear human speech and songs from the den or the deep forest. Even when the bruin was killed, it was believed to still be able to understand the songs and the meaning of the ritual actions performed during the feast or the skull ritual. Finally, the bear was able to speak and tell the forest spirits about the ritual honours it received during the ceremonials (Piludu 2019a, 294–295).

The singer Iivana Malinen[44] said that *Bear Songs* should be performed in all the phases of the rituals "to please the forest maidens" (SKVR I4/1191, Vuonninen, Viena Karelia, Russia), and to please the master of the forest (Tapio), "so that Tapio would not get angry if a beast disappears from his cattle" (*ettei Tapio vihastuisi, jos on elukka karjasta katonnut*; SKVR I4/1244, Vuonninen, Vuokkiniemi, Viena Karelia, Russia, 1888). Angered forest *haltias* could send diseases to the human communities or bears and wolves to kill cattle. If the hunter correctly performed all the rituals and songs, the woodland denizens were "pleased": The forest spirits provided more bears or game animals, and the satisfied bear "returned" to a future village feast as the guest of honour (Piludu 2019a, 19–20).

Pleasing Tapio with offerings of ale and gold

The passage between the inner world of the village and the outer world of the forest was ritualised in many ways. The hunters sang *The Birth of the Bear*-incantations, believing that by telling the secret origins of the bruin, they gained control and power over the animal.[45] The hunters generally sang that

43 Viveiros de Castro (born in 1951) is one of the most influential Brazilian anthropologists; he developed the concept of Amerindian perspectivism.

44 Iivana Malinen or Jyrkińi Iivana was a skilled Karelian singer, *tietäjä* (seer) and *patvaska* (seer specialised in protecting people during weddings) of the Malinen family of singers. He learned his incantations and *Bear Songs* from his father, Jyrki Malinen (Ontreińi Jyrki), and his grandfather, Ontrei (Haavio 1948, 6–31).

45 On *The Birth of The Bear* in the mythical forest and in the sky, see Piludu, this volume, on the Finno-Karelian bear skull rituals; Piludu 2022. On the *The Birth of The Bear*-incantations influenced by popular and syncretic Christian faith, see Piludu 2019a, 123–129. In some incantations, a saint or St Mary created the bear by throwing wool into water.

the bear was born in the mythical forest of the *haltias* (Tapio or Mielikki): Tapiola, Metsola or Pohjola (Piludu 2019a, 144–120). When the hunters entered the forest, they sang that they were walking in Tapiola, Metsola and Pohjola; the hunting ground coincided with the mythical land of the *haltias*, the place the bear was born (Fig. 5; Piludu 2019a, 159).

In order to obtain the favour and assured help of the *haltias*, it was necessary to please them in many ways. To begin, it was mandatory to give offerings of ale to the most important male *haltia*, the master of the forest, Tapio (SKS KRA, Lilli Lilius b 181, 1888, Joutsa, central Finland, Otto Jussila). The hunters also offered small quantities of melted gold or silver, or some coins, to please Tapio (SKVR I4/1098, 36–41, Latvajärvi, Viena Karelia, Russia, 1839). Often these offerings were placed on or poured over the branches or roots of the "table of Tapio" (*Tapion pöytä*), a young spruce with an unusual shape, having a very flat top the branches of which sloped downwards so that it resembled a natural desk or altar (Piludu 2019a, 83, 154–157). If the hunters intended to kill a bear, they were expected to offer something valuable in exchange. This concept appears in many hunting cultures. Among the Mistassini Cree (Canada), the hunt was presented as a form of transaction between the hunters and the guardian of the game animals (Tanner 1979, 148). Offerings regulated the balance between "this world" and the "other side" represented by the forest spirits. If the hunters did not make offerings to the forest spirits, they could be punished with bad luck in hunting and an illness. However, when the hunters made offerings, they believed that the forest spirit was, in one way or another, "obliged" to provide the desired quarry. The rules of reciprocity were also valid for the *haltias*. The reciprocity between humans and sacred agents operated following moral principles recognised by both parties (Stark 2002, 41). The ethnologist Laura Stark stresses that "agreement upon shared 'rules of the game' and submission to a system of mutual moral obligation were expressed through collective symbols" (Stark 2002, 41). The offering of ale, one of these collective symbols, pleased the male *haltia,* Tapio, making him favourable towards the hunter. As Tapio was conceived as an anthropomorphic, male, humanlike being, he was supposed to enjoy the alcoholic beverages that humans loved. Ale was much more than an intoxicating beverage, it was a collective symbol with great relevance in almost all the rituals of the village communities, from agricultural spring rituals (*Ukon vakat*) to Christmas (Apo 2001, 369). Ale was present at all the parties and ceremonials; it was a powerful symbol of social life, sharing, "being together" and collective singing. The hunters also offered ale during the bear feast and the bear skull ritual to please the soul of the killed bruin.[46]

Seduction and mimesis in the forest: Pleasing the forest mistresses

The *Bear Songs* were characterised by a particular language with a strict ritual etiquette (Tarkka 2013, 71). The bear did not like people uttering its real names (*karhu* or *kontio*) and it got angry if someone pronounced these; the result was a bear attack against humans or cattle. The use of a multitude of honorary names involved the ritual strategy of gratification of the bear. The most common honorary names for the bear were *otso*, *ohto*, *mesikämmen* (honey-paw), *jumalanvilja* or *metsän vilja* (grain of God, grain of the forest), *kulta* (gold) or *hopea* (silver). In all the circumboreal bear ceremonials the use of ritual names, circumlocutions and euphemisms to honour the bear is present (Hallowell 1926, 43–51).

A way to please the female *haltias* protecting the bear was the "wooing or seduction strategy", which was common in the Finno-Karelian *Bear Songs*. Quite often the hunters sang to female *haltias* or to the forest, which was considered a female entity: "Become fond of my men, you forest, / fall in

46 See Piludu, this voume, on the Finno-Karelian bear feast and wedding, and also on the Finno-Karelian bear skull rituals.

love, you wild wood, with my dogs!" (*Mielly, sä metsä, miehihini, / kostu, sä korpi, koirihini!*; SKVR I4/1194, 19–22, Kieretti, Viena Karelia, Russia, 1894). The infatuation of the forest with the hunters was functional when it came to reaching their objective. Falling in love with the hunters, the forest accepted them as lovers and members of her kin or people.

What is peculiar is that the hunters requested the forest female *haltia* or the feminine forest to fall in love with them, but they never sang to the forest or a female spirit that they loved her. Here, seduction was almost the opposite of love. Rane Willerslev emphasised that the hunter/seducer remained emotionally unavailable because seduction is a game of power (Willerslev 2007, 105). Love involved self-surrender. If the forest fell in love, it gave the hunter whatever he wanted. But if the hunter fell in love, he would assume the role of the "giver", and of a person who is controlled by the forest. By being a seducer, the hunter maintained his capacity to reflect and act in a rational manner and manipulate the feelings of the forest.

Lotte Tarkka notes that, in a *Bear Song* by the Karelian singer, Arhippa Perttunen,[47] the bear hunt was portrayed as a sexual act or an erotic flirting (Tarkka 2013, 343–344) with a female forest spirit: "My mind is set, / set on visiting Metsola, / to make love to the forest maiden, / to drink the forest honey, / flesh from under the leaves, / grease from the spruce's roots" (*Mieleni minun tekisi, / mieli käyä metsolassa, / metsän nettä naiakseni, / metsän mettä juoakseni, / lihoa lehen alaista, / kuuta kuusen juurehista*; SKVR I4/1095, 1–6, Latvajärvi, Vuokkiniemi, Viena Karelia, Russia). In this case, the "gastronomic" names for the bear (honey, flesh, grease) are connected with an explicit description of sexual intercourse or a wedding proposal with a strong erotic content and a bodily fusion with the environment. However, the meaning of the verb "to make love" (*naida*) also means "to marry". The bear hunt was poetically transformed into a sexual or wedding proposal directed at the female guardians of bears. The hunters tried to appeal to and seduce the female *haltias* who could provide game (honey, flesh, grease).

With the symbols of sex and marriage, the process of identification between the hunter and the forest reached a high level of mimesis. Tarkka stresses that the ritual communication became a real blending or bodily fusion with the forest: the hunter and the forest spirit melded their "flesh, grease and honey", making love under the leaves and on the roots of the trees. The wooing hunter created a state of ritual communion, by means of which he became akin to the forest or merged with it physically (Tarkka 2013, 344).

The imitation and seduction of forest spirits and game animals are fundamental aspects of several hunting rituals around the world. The anthropologist Rane Willerslev, who studies the rituals of the Siberian Yukaghir hunters, stresses the relevance of the connections between mimesis and seduction. Willerslev observes that imitating something – the mimetic faculty – is to be "sensuously filled with that which is imitated, yielding to it, mirroring it, and hence imitating it bodily" (Willerslev 2007, 96). According to Michael Taussig,[48] mimesis has a corporeal aspect; the sensuous contact between the imitator and the original (Taussig 1993, 10; see Willerslev 2007, 12).

To seduce the forest spirits, Arhippa Perttunen also sang that "the man smells of the taste of honey" (*Mies haisee meen maulta*; SKVR I4/1095, 13). The hunter was perfumed with honey, the most sweet and sensual of the products of the woodland, the favourite food of the bear and a circumlocution for

47 Arhippa Perttunen or Arhippa Perttuńe was one of the most famous Karelian singers of all time. Elias Lönnrot transcribed his songs in 1934, and Arhippa's songs were extremely important when editing both the *Old Kalevala* (1835) and the *New Kalevala* (1949). Arhippa learned his songs from his father, the "Great Iivana". The Perttunen family came from the village of Laitasaari (Oulujoki), near Oulu in Finland, but they were fully integrated into the Karelian singing culture. Arhippa's son was Arhippaińi Miihkali or Miihkali Perttunen, another famous singer (Timonen 2008, 14–17).

48 Michael Taussig (born in 1940) is an Australian anthropologist interested in the concepts of mimesis, alterity, fetishism, and the philosophy of Walter Benjamin.

the bear itself. According to Tarkka, the sensual melding with the forest could also be interpreted as a form of camouflage (Tarkka 2013, 344). The hunter thus lost his human smell and acquired the scents of the forestland and the human scent could no longer be detected by animals.

The singer Juhana Korpelainen[49] clearly sang about a wedding proposal, declaring his desire to make love to/marry (*naida*) the forest maiden, "so I could bustle at a wedding / twirl at the table's end" (*Saisin häisä häärästellä, / pöydän pääsä pyörästellä*; SKVR VI2/4889, 30–31, Kiuruvesi, North Savo, Finland, 1819). Korpelainen also lamented: "Woe, I am indeed a poor boy, / as I was not married / with the favourite (or lovely) maidens of the forest, / with the girl with fur breast"[50] (*Voi minun polosen poijan, / kuin ei naitettu minua, / metän mieli tyttärillä / karva rinnoille kavolle*; SKVR VI2/4889, 32–35).

Korpelainen did not sing about occasional sexual intercourse but of a wedding, a ritual that created a kinship relation with forest *haltia*s that could safeguard game animals in the future. The Savonian singer Matti Waljakka asked of the forest mistress, Annika: "Marry us, our men, / regenerate our heroes / with the favourite (or lovely) daughters of the forest" (*Uuista urohitamme, / metsän mielityttärille, / karvarinta rakkahille*; SKVR VI2/4822, 31–35, Mäntyharju, South Savo, Finland, 1858). Here, the forest mistress, Annika (St Anna syncretised with the Mistress of the Forest, Mielikki), is an authoritative mother-in-law, and the brides are the forest spirits or the bears, who could be addressed with female names.

The hunter-prey relationship is conceptualised as seduction and marriage in many hunting cultures. Among the Makuna of Amazonia, the hunter explicitly declares a wish to attract and seduce his prey, and the relationship between the spirit owner and its animals is equated to that between a father and his marriageable daughters, which could be allocated to human beings if they properly performed all the rituals (Århem 1996, 192). Among the Cree of the East Coast of James Bay (Canada), the relationship between the hunter and the caribou is presented as "sexual lust", as the caribou was believed "to give itself to the hunter eagerly" (Preston 1975, 230; Tanner 1979, 138).

In Finland and Karelia, sexual intercourse or wedding proposals in the *Bear Songs* were strategies to become a relative of the forest, part of the "kin" of the forest mistress. According to Laura Stark, in Karelia the wedding was a moment in the social fabric which had the potential to alter the division of labour, power dynamics and the relations between the social classes (Stark 2006, 170–171). Sometimes farmhands and humble serving maids were able to "marry up" into the landowning class (Stark 2006, 171). Weddings could thus enrich or empower the weaker or poorer members of society. The hunter (who presented himself as a foreigner and a poor wanderer in the forest) who married a forest *haltia* was believed to be able to influence the decisions of his powerful and rich "wife": She would generously give her "gold" and "silver" (bears) to the hunters. However, the seduction or the wedding with the forest *haltia* was temporary; the hunter became a lover or husband of the forest only for the short period of the hunt. After that, he returned to the village and his wife.

If the hunter became a sexual partner or a "relative" of the forest *haltias*, he could ask of them the desired prey. In the song by Arhippa Perttunen, the seductive lines were followed by requests. He asked the Forest Mistress to send the scent of the bear towards the hound: "Slash the smell as an arc, / let it go into the dog's nostrils" (*Tuhku kaarelle sivalla / tulla koiran sieramihin*; SKVR I4/1095, 16–17). Afterwards, he asked her to set the hound to discover the location of the bear or its den (SKVR I4/1095, 21–13).

49 Juhana Korpelainen was a famous Savonian singer. However, he considered himself a *tietäjä* (seer), and the incantations and the *Bear Songs* are dominant in his repertoire (Siikala 2016, 308–309).

50 The "fur breast" of the forest maiden indicates a deep relation between forest spirits and fur animals. Although beautiful, the forest maidens were hybrid or shape-shifter beings, with some degree of animality, or with some vegetal feature. In western Finland, forest maidens were portrayed as attractive, but with backs made of bark.

The last lines reveal that the hunter did not perform a complete metamorphosis. By marrying the forest *haltia* or making love with her, he became mimetically similar to the forest, but he maintained his consciousness and identity (Willerslev 2007, 107). Taussig stresses that mimesis is like "dancing between the very same and the very different" (Taussig 1993, 129). While the hunter emphatically played "the role of the harmless lover" (Willerslev 2007, 104), he never forgot the main goal of his hunt. If the hunter completely became a forest being, he lost his agency and capacity to hunt.

Mimesis requires profound reflexivity; the hunter, sensuously melding with the forest, should pay attention to avoid complete absorption into it. The imitator is conscious that the original is different. If there is complete homogenisation, there is nothing different to imitate. Mimesis depends on the existence of difference, and the imitator remains a being "in between" the identities (Willerslev 2007, 12). The imitator voluntarily remains an imperfect copy, "a poorly executed ideogram" (Taussig 1993, 17) of the original.

Mimesis and seduction are sophisticated games of power. Taussig argues that the copy or the imitator, "drawing on the character and power of the original, may even assume that character and power" (Taussig 1993, 13). Willerslev stressed that hunters did not use imitation to represent something or someone but to manipulate the power relations in the environment around them (Willerslev 2007, 95). In the case of Arhippa's song, the hunter's mimetic body fusion with the forest – a sexual and sensual fusion with the "grease" of forest spirits on the tree's roots – was completed to assume seductive power over the female *haltia*, who had the right to give the bear to the hunter.

The transformations of the forest spirits and the hunting ground

After the offerings of ale and the seductive songs, the hunters asked the *haltias* to bring them to the bear den. The Savonian hunter and singer Juhana Korpelainen prayed to the female forest spirits: "Bring [me] to that hill, / carry me on that mound, / where I could get the prey, / my job will bring a catch" (*Saata sillen saarexellen, / sille kummullen kuleta, / josta saalis saatasiin, / eron toimi tuotasiin*; SKVR VI2/4889, 49–52, Kiuruvesi, North Savo, Finland, 1819). The Viena Karelian hunters described the place around the hill or den as shining with gold or expensive materials: "Carry me on that mound, / where the spruces are in golden belts, / the pines are in silver cover, / the branches of the aspen in baize!" (*Tuolla kummulla kuleta, / kussa ois' kuuset kultavöissä, / petäjät hopeisiloissa, / hoavan oksat hal'l'akoissa!*; SKVR I4/1193, 23–26; Koljola, Viena Karelia, Russia, 1894). The seduced female *haltias* became the guides of the hunters. The gold and silver are the "richness" of the forest spirits – the bears. The hunters also obtained the favour of the *haltias* with other strategies; singing that they were humble, weak, starving poor people, lost in a strange land; they absolutely needed the help of the powerful and rich spirits in order to obtain prey (Piludu 2019a, 170–174). The huntsmen avoided boasting about themselves, and they presented themselves as humble and respectful "guests" of the forestland.

The hunters asked the *haltias* to enchant the forest: "Let the groves shine like the sun, / the wild woods shine like the moon" (*Lehdot paistaa päiväsenny, / korvet paistaa kuutamannu*; SKVR VII5/3370, Salmi, Ladoga Karelia, Russia, 1884). The shining of the forest was the visual signal the hunter expected. The light, the sun and the moon represented life and birth (Tarkka 2013, 393), when the woodland was rich with game. By contrast, darkness and the cold were related to the abode of the dead (Tarkka 2013, 390) and a forest without animals.

If the request was accepted, the sombre backwoods changed into a marvellous place. The hunters asked the personalised forest to "wrap (or dress) the thickets in a broadcloth, / the deep woods in German linen" (*Viiat verkohon[!] vetele, / salot Saksan paltinoihin*; SKVR VII5/3367, 5–6). The "dressed" trees were also the "clothes" of the *haltias*. The wood should be dressed in linen clothes

made in Germany; the forest's clothes were imported, coming from far away, so they were expensive, valuable. Fancy textiles and rich clothes were related to the abundance of prey. If the *haltias* wore expensive or golden clothes, the woodland would be rich with animals. If they wore poor gowns, they would not send any catch to the hunter (Tarkka 2013, 331). The hunters also asked the forest *haltias* to modify their environment, flattening the hills, for example, to make their travel in the forest easier and faster.

The songs emphasised a radical change in the behaviour and status of the *haltias*: The jealous and severe protectors of bears became lovers, brides, generous hosts, and providers of bruins; the guides who carried the hunters to the hill that shone of gold and silver (the den of the bear). The modification of the behaviour of *haltias* included a "change of their clothes" (the trees), which was a radical transformation of the forest; the spirits transformed a dark, dreadful and poor woodland into a shining, rich and welcoming environment. The richness of the trees indicates abundance of prey, as the bears were considered the "gold" and the "silver" of the *haltias*.

The bear as a maiden who has overslept: Calling the bear out of his den

When the hunters reached the bear's den, it was forbidden to kill the bruin while it still slept in hibernation. The rite of awakening the bear and calling it out of the den before the kill is present in almost all the circumboreal bear ceremonials (Hallowell 1926, 53–54).

The bear should be awakened for a fight, which was supposed to be fair. In reality, the bear was sleepy and weak, it faced a group of hunters alone, and it could be blinded by sunlight when it arose (Sarmela 1991, 211). The Karelian singer Lukkańi Huotari[51] awakened the bear as if it was a maiden: "Rise now, sooty maiden, / from the sooty fireplace" (*Nousep' pois, nokińe(n) neit'[i], / nokiselta nuotiolta*; SKVR I4/1206b, 1–2; Ponkalaksi, Viena Karelia, Russia, 1877). These lines were also a motif of the Karelian wedding songs to wake up a bride who had overslept on her wedding day (SKVR I4/2265, 1–2; Tollonjoki, Vuokkiniemi, Viena Karelia, Russia, 1918; Tarkka 2013, 334). The bruin, which in several *Bear Songs* is addressed as a male, is here a maiden. Tarkka stresses that the bear's symbolic change of gender was meaningful, as the Karelian hunter saw a similitude between the bear and the "maiden" or "bride" (Tarkka 2013, 351): Both were seen as important "catches". The bear was probably considered a catch both as sweet and desirable as a young bride sleeping in her bed. The motif is part of the seductive strategy of the hunter. First, the hunters seduced the female *haltias* in order to reach the den. After that, the hunters seduced the bruin itself, described as a maiden, to wake it up from its den. The hunt, which is a violent act, causing the death of animals, continued to be presented by the hunters as a journey to seduce or marry "maidens" of the forest village. The hunters carefully transformed the hunt, violence, and killing into sexuality, seduction and weddings – acts and ceremonies that pleased the forest spirits and game animals.

Denying responsibility for the bear kill

After the kill, the hunters continued to sing songs to the bear as if it was still alive and able to listen to their songs. At first, the responsibility for the bear kill was totally denied; in the songs, the hunters invented a false version of the facts in order to vindicate themselves (Piludu 2019a, 200–203). The

51 Lukkańi Huotari, Huotari Lukkanen or Ponkalahden Huotari was a skilled Karelian fisherman, who also knew incantations for the bear hunt. In his village, Ponkalaksi, people went often to Finland to buy and sell things, and there were Finnish influences on clothing and on the buildings.

Karelian singer Jyrki Malinen[52] portrayed the kill as an accident; the bear killed itself by falling from a tree: "You slipped by yourself from the branch, / you rolled down by yourself from the bough, / over your berry-filled belly, / broken is your golden stomach" (*Itše hairahit havolta, / itše vierit vempeleltä, / läpi marjaisem mahasi / rikki kultaisen kupusi*; SKVR I4/1207, 9–12, Vuonninen, Viena Karelia, Russia, 1872). This motif, which was very common in the Bear Songs, was the explanation furnished in Karelia and Finland for the bear's death. In this way, the bear brought about its own death and the hunter was blameless for the killing of his quarry (Tarkka 1998, 99).

The hunters' justifications or apologies for the bear's death are a fundamental phase of the circumboreal bear ceremonials. However, different explanations were possible among the various ethnic groups who performed bear ceremonials. The main strategy was to shift the responsibility to some other animal or a foreign hunter (Hallowell 1926, 55–57). The Yakut (Siberia) blamed the Russians or the Tungus, the Khanty (western Siberia) accused the Russians, the Sámi told the bear that the hunters were Russian, German, or English (Kuusi 1963, 47), the Ojibwa (Canada, USA) accused the English or Anglo-American hunters (Hallowell 1926, 55–57), and the Finno-Karelians told the bear that their knives had been made in Estonia and Germany. In North America, many native hunters simply apologised, telling the truth to the bear. The Western Abenaki hunters (Quebec, Canada, Saint Francis River) explained that they needed fur for their coats and meat to eat. The Menomini hunters (Menominee or Mamaceqtaw, United States) reminded the bear that it was intelligent and that it knew that the children of the hunters were starving and that they needed meat (Hallowell 1926, 55). The justification for the bear kill was a fundamental way of avoiding the revenge of bears and forest spirits, so the hunters paid particular attention to this delicate phase in the ritual.

Conclusions: Personhood and gifts, honour, seduction and innocence

When analysing the *Bear Songs* sung during the hunt, there is no doubt that both the bear and the forest *haltias* were personalised in quite a sophisticated way. This personalisation was a strategy to communicate with them, as one of the main characteristics of personhood is the ability to speak and understand the language. Persons interact with other persons, so the hunters created a web of social and emotional relationships with the *haltias* and the bear.

A fundamental characteristic of personhood is the capacity to feel emotions and have expectations. The main goal of the *Bear Songs* and hunting rituals was to avoid the rage of the forest *haltias* and the bear itself and to gratify them in many ways, transforming their perception of the hunt as a set of acts honouring, seducing, satisfying and pleasing them. The hunters' ritual strategies included:

- Offerings of ale and gold and silver. With these gifts, the hunters showed respect as they were foreigners, guests and visitors of the forestland owned by the *haltias.* However, the rules of reciprocity stressed that, if the *haltias* accepted the offering, they were supposed to give another kind of gift (the bear) to the hunters. The system of gifts bound the forest and human communities in a web of mutual expectations, including:
- The seductive songs for the female forest spirits. These lines pleased the forest maidens, who became infatuated with the hunters and helped them to reach the bear den;
- The respectful behaviour of the hunters, who used honorary names for the bear;
- Songs showing humbleness towards the *haltias*;
- The rite of awakening the bear and calling it out of the den: addressing the bruin as a bride.

52 Jyrki Malinen or Ontreińi Jyrki was the son of Ontrei Malinen and the father of Iivana Malinen. The whole Malinen family had a consistent repertoire of *Bear Songs* and epic songs. Jyrki learned the *Bear Songs* from his father Ontrei (Haavio 1948, 19–20; Siikala 2016, 158).

Finally, the hunters sang songs telling the bear that they did not kill it, but that it died slipping from the branch of a tree. The rituals and the songs permitted the transformation of personhood: The bear, the *haltias* and the hunters gained different social roles in the *Bear Songs*. Several scholars have noted that, in modern Western societies, personhood means, above all, individual consciousness, while in folk or indigenous societies a person is essentially a social being (Mauss 1985; Carrithers et al. 1985; Brightman et al. 2014). A social person could be defined by a social role (foreigner, guardian, bride, groom, seducer, seduced, helper, protector), but these roles in the *Bear Songs* were far from static. With offerings and seductive songs, the forest *haltias*, who were portrayed as jealous protectors of bears, were transformed into guides who helped the hunters and gave them the prey. Before the kill, the bear was kindly awakened as a bride or a maiden that had overslept, in order to persuade the bruin to gently leave the den without attacking the hunters.

The hunters presented themselves to the forest maidens as lovers or suitors, not as the killers of their cattle or offspring (the bears). The sexual intercourse or marriage transformed the social status of the hunters, who became accepted – during the short time of the hunt – as members of the "people of the forest". Entering the forest, the hunters acted as handsome seducers of female forest *haltias* and the feminised woodland but, when they required the help of the forest spirits to find the den, they could humbly redefine themselves as orphans, poor and hungry foreigners, or young boys who absolutely needed the guidance of the *haltias*. The hunters became mimetic beings because, in the songs, they represented their sexual intercourse with the forest spirits as a bodily fusion with the forest. However, the hunters did not completely transform themselves into forest *haltias*; they maintained their human identity, as their brief seductions and weddings were aimed at convincing the forest spirits to guide them towards the bear den.[53]

The hunters' mimesis was a sensual, strategic, and voluntary manipulation of the process and degree of identification with the alterity represented by the forest *haltias*. This mimesis was a partial transformation of the hunter into the kin of the forest *haltias*. The "incomplete coping" of the forest *haltias* was characterised by a state of "in-betweenness" (see Willerslev 2007, 105–108); a liminary state between the human and the forest world. However, the hunters did not completely transform themselves into *haltias*, nor they were dominated by powers of the forest. The mimesis of the singers of the *Bear Songs* included the defence of their independent agency as hunters.

Acknowledgements

I would like to express my special thanks of gratitude to Paavo Hamunen and Susanna Lendiera for the permission to publish their photos, and to Riho Grünthal, Professor of Finnic Languages (University of Helsinki) for the permission to publish an adapted English version of his map of Finnic languages. I would like to thank Lotte Tarkka, Professor of Folklore Studies (University of Helsinki), for her valuable help in the interpretation and translation of the Viena Karelian *Bear Songs* when she was the supervisor of my PhD work on Finnish and Karelian bear ceremonialism. This chapter is dedicated to the memory of Enrico Comba (1956–2020), former Professor of Anthropology of Religions at the University of Turin, for his constant interest in my research work. I'm grateful to the Niilo Helander Foundation (*Niilo Helanderin Säätiö*) for having generously funded my research work at the University of Helsinki.

53 During the bear feast, the killed bear also participated in a mimetic wedding: In the songs, it was presented as a groom or a guest of honour at a wedding, but it did not become completely human, maintaining its alterity and dangerousness. See Piludu, this volume, on the Finno-Karelian bear feast and wedding.

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Fig. 1. Map of the Finnic languages (courtesy of Riho Grünthal, after Grünthal/Sarhimaa *2004/2012; see also* Grünthal *2020, 6). The most frequent dialects of the Bear Songs were the North Karelian, Viena Karelian or White Sea Karelian (dark purple on the map, the northernmost part of Karelia, 3.1), and the Savonian dialects (light blue or azure on the map, 1.1), which are used throughout a great part of eastern and central Finland. For details about the Finnish dialects in relation to Bear Songs, see note 25 in this chapter.*



Fig. 2. "The Bear and the Forest", photo by Paavo Hamunen, 2020. Metsä *(forest),* metsän kultaine n kuningas *(golden king of the forest) and Tapio (the most important male guardian spirit of the forest, the personalised "Forest") were ritual and honorary names for the bear in the Bear Songs. The sacred status of the bear was strictly connected with the forest and the world of the* haltias *(guardian spirits) of the woodland. Pronouncing the real names of the bear (*karhu *or* kontio*) was strictly prohibited during the bear hunt and ceremonials: The hunters believed that the bruin would be enraged and attack the gunmen. Other honorary names were* ohto, otso, mesikämmen *(honey-paw),* auvo *(honour, luck, groom),* kulta *(gold) and* hopea *(silver).*



*Fig. 3. "The Bear Soul", photo by Susanna Lendiera, 2018. According to Finnish and Karelian folk belief, the bear was sacred (*pyhä*); it had the status of a person (*ihiminen*) and a soul (*henki, sielu, haltia*). If a bear lost his soul, due to some malevolent ritual done by a sorcerer (*noita*), it became enraged and killed cattle or humans.*



Fig. 4. Karelian bear hunters from Venehjärvi, a Viena Karelian village that was famous for its bear killers and singers of Bear Songs. Photo taken by Into Kondrad Inha, during his travels in Karelia, 1894. The hunter holding the rifle was Varahvontta Lesonen, the guide of Inha (photo Museovirasto, Finnish National Board of Antiquities; Finno-Ugric Photographic Collection [Suomalais-ugrilainen kuvakokoelma] SUK5:19; public domain).

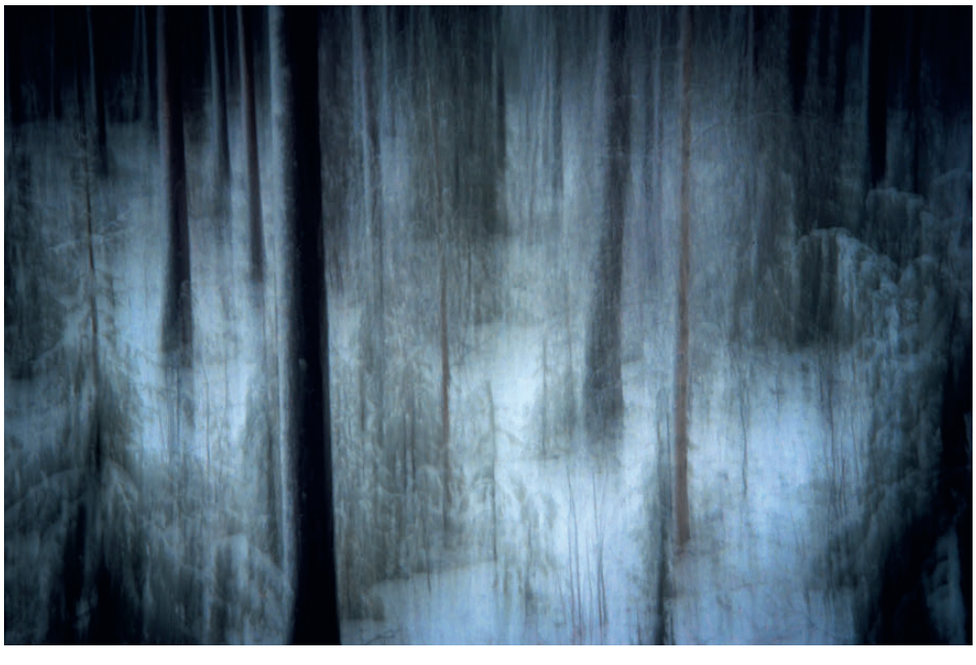


Fig. 5. "The Dark Forestland", photo by Susanna Lendiera, 2018. In Finno-Karelian folk beliefs and in the Bear Songs, the forest was portrayed as an otherworld called Tapiola, Metsola or Pohjola (The Northland). At the beginning of the hunt, the hunter sang that he was entering "the dark Pohjola" (pimeassä pohjolassa)*; the forest was described as a dangerous, deadly, otherworld that was strictly controlled by powerful* haltias *(guardian spirits). When the* haltias *accepted the hunter, they changed the aspect of the woodland, and the hunters sang that the forest shone with light, gold, and silver.*



Fig. 6. "Tellervo, Daugher of Tapio (Diana)", bronze sculpture by Yrjö Gabriel Liipola (1881–1971), 1928. Tellervo was one of several forest maidens, haltias *(guardian spirits), which protected the bears. In the Bear Songs they are presented as beautiful, and the hunters sung seductive songs to convince them to give them a bear and to guide them toward the den. Liipola, who studied sculpture in Florence, interpreted Tellervo as a northern version of the Roman goddess of the hunt, Diana (photo V. M. Piludu, Helsinki, 2022).*

The Finno-Karelian bear feast and wedding: The bruin as a guest of honour of the village

By Vesa Matteo Piludu

Keywords: Bear ceremonialism, Finno-Karelian bear feast, bear wedding, bear as a guest of honour, ambivalence of the bear, bear and women, ritual eating of bear meat and organs

Abstract: This article aims to analyse the second stage of Finnish and Karelian bear ceremonialism – the songs and rituals performed during the bear feast in the village of the hunters. The feast in which the bear meat was eaten received a ritual "voluntary visit" of the bruin to the village. During the bear feast, the killed bruin was treated as a groom or a guest of honour participating in a marriage or a drinking party: The hunters stressed the humanlike features of the bear to accomplish a successful ritual exchange. The introduction of the killed bear into the village was even presented as the bear's wedding, representing a partial and mimetic unification of the people of the forest with the human community. However, the people never forgot the potential dangerousness of the entrance of the bear into the village, or the bear's alterity. The arrival of the killed bear in the village resembled its attack on cattle, so the hunters encouraged the young women to protect the cows. The bear feast reveals the complexity of the relationship between bears and women, who sometimes refused to eat bear meat. Bringing home killed game animals, and in particular the bear, could cause supernatural illnesses. To avoid these risks, the bear was pleased with songs and offerings of ale, and the eating of the meat and organs was made possible by performing protective rituals. Particularly important was the ritual of eating the powerful organs of the head of the bear (the ears, eyes and tongue), connected to a deep form of bodily and spiritual communion between humans and bears.

The bear feast: The visit of the forestland guest to the village

After the hunt and the kill, the hunters transported the bear corpse on a pole. In the second phase of the Finno-Karelian bear ceremonialism, the bruin passed from the forest's sacred and mythical landscape into a human village (see Fig. 1), and it was invited to participate in a great feast.[1] During the bear feast, the killed bear was treated as a groom or a guest of honour participating in a wedding or a drinking party: The hunters stressed the humanlike features of the bruin to accomplish a successful ritual exchange. The poetic language of the *Bear Songs* transformed the hunters' elaborate trick into a way of honouring and pleasing the bear and the forest spirits: The feast in which bear meat was

1 For an analysis of the songs and rites of the bear hunt, the bear skull rituals, the source materials, and the vernacular conceptions of the forest, see Piludu, this volume, on the songs and rituals of the Finno-Karelian bear hunt, and on the Finno-Karelian bear skull rituals.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 723–744 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134358

eaten became a wedding and a jolly drinking and singing party. Overall, the feast transformed the hunt's violence into its exact opposite: a celebration of the continuation of life and of the good relations between the human community and the forest dwellers. The bear feast is called "post mortem ceremony" in the model of the phases of the bear ceremonialism analysed by Hallowell (Hallowell 1926, 61–135).[2]

In the circumboreal regions, the feasts were a fundamental part of the hunting rituals: The hunters and their communities joined together to eat the meat of large game animals (bears, elks, caribous) or sea mammals (whales). These feasts were presented as "voluntary visits" of the game animals to parties or ceremonies in which the prey was the guest of honour of the village (Lot-Falck 1961, 180–188). There was great variation in the organisation of the feasts, depending on the hunting culture and on the species of game animal (Tanner 1979, 157–169; Schmidt 1989; cf. Rydving 2010, reprinted in this volume).

Even if the bear was dead, the Finnish and Karelian hunters believed that it preserved its consciousness, and the hunters continued to sing to it, as its soul was still alive. The bear's soul was considered as a person, a guest able to understand the songs and to see what the people did during the feast. The *Bear Songs* of the bear feast resemble those sung by the hunters when leaving the village and entering the forest, but this time the main traveller and guest was the bear, and the journey was in the opposite direction. The bruin's entry into the village was considered a liminal and potentially dangerous event; small mistakes could provoke the posthumous revenge of the bear, often in the form of the bruin's attack on the cattle. Imperfection in performing the rituals could also cause a contagion that was produced by a supernatural illness – the "hate of the forest",[3] the "nose of the forest",[4] or the "hate of the bear".[5] This illness was caused by "the force of the forest" (*metsän väki*);[6] a dynamic and potentially dangerous force present in the bear meat, the *väki,* could invade human bodies.

Other hunting peoples also faced the problem of opening and closing, shifting and permeable boundaries with the external environment (the forest, the sea, the desert, the mountains). Hallowell assumes that, in Ojibwa[7] ontology, humans and animals are analogically related as human and nonhuman persons, but the Ojibwas draw some differences between the two forms of personhood (Hallowell 1960).[8] A fundamental problem was keeping a certain distance from the animal persons entering the village after the hunt.

The anthropologist and historian Ann Fienup-Riordan[9] states that, according to Yup'ik[10] seal hunters, both humans and animals are characterised by personhood, but there is a clear distinction between

2 For an analysis of the theories of Hallowell, see Piludu, this volume, on the songs and rituals of the Finno-Karelian bear hunt.

3 The "hate of the forest" (*metsän viha*) related to the idea that the forest *haltias* (guardian spirits) were upset for some offence performed during the hunt or the feast.

4 The name *nenä* (nose) means something similar to a "bird beak", "something aggressive" that could penetrate the body and the flesh. The name *nenä* in Finnish related to a person who showed aggressive behaviour (*nenäkäs*) and put his/her nose in front of the face of another person.

5 The "hate of the bear" (*metsän viha*) related to the idea that the bear, or its soul, was upset and enraged about something; for example, if the bear meat was eaten without following strict ritual procedures.

6 The name *väki* means "force" (a dynamic force coming from the forest and able to invade human bodies) and "people". The two meanings are connected: The people of the forest (the *haltias* and the bear) have a force that could cause illness to humans. On the other hand, the hunters could also reinforce themselves by eating some parts of the bear and absorbing the bear force, but only if they performed the rituals. Without these rites, the bear meat was poisonous.

7 A native people living in Canada and the United States.

8 For an analysis of the importance of Hallowell's writings on bear ceremonialism and ontology, see Piludu, this volume, on the songs and rituals of the Finno-Karelian bear hunt.

9 Ann Fienup-Riordan (born 1948) is an American cultural anthropologist and historian, known for her works on the Yup'ik culture.

10 The Yup'ik are an indigenous people living in western, central and southwestern Alaska.

human and nonhuman persons (Fienup-Riordan 1994, 48). Roy Wagner[11] and Fienup-Riordan define the human-animal relationship as a "deliberate controlled analogy" (Wagner 1977, 361; Fienup-Riordan 1994, 48), which made a carefully regulated ritual interaction between the two communities possible. Yup'ik ritual activities focused on the construction of boundaries and passages to circumscribe the flow of different persons, actions, and forces within an otherwise undifferentiated world (Fienup-Riordan 1994, 49). Interactions between human and animal persons were supposed to follow innumerable rules to create boundaries, but at the same time they enabled ceremonial exchanges between the human and animal worlds (Fienup-Riordan 1994, 48–51).

In the Finno-Karelian bear ceremonial, these "boundary problems" were extremely important. The introduction of the killed bear into the village was even presented as the bear's wedding, representing a partial unification of the forest with the human community (Tarkka 2013, 348). However, the people never forgot the potential supernatural dangerousness of the entrance of the bear into the village. For the women, who took care of the cows, the arrival of the killed bear in the village resembled its attack on cattle, so the hunters encouraged young women to protect their cows (Tarkka 2013, 354–356).

As I have already explained in this section, bringing home killed game animals, and in particular the powerful bear, could infect the humans with an illness coming from the force (*väki*) of the forest or from the bear. Eating bear meat without proper rituals also caused a "contagion" (Piludu 2019, 251–253). For these reasons, the marriage of the bear and the period of unification of the bear with the village was brief; just after the end of the feast, through the ritual of the bear skull, the bones and soul of the bear were supposed to return to their mythic homeland (Piludu 2019, 265–271).

Connecting the bruin and human communities: The bear as a guest and a groom

The hunters progressively integrated the killed bear into the human community. When leaving the forest, the Karelian hunter Moiśśeińi Kuśma[12] invited the bear to wander "to the heroic people,[13] / to the manly company" (*uroisehe väkeh, / miehisehe joukijoh*; SKVR I4/1203, 29–30, Latvajärvi, Vuokkiniemi, Viena Karelia, Russia, 1894).[14] In this song, the bruin is a male adult who is requested to join the manly hunting group. With a sort of rapid rite of passage, the killed bear was thus incorporated into the group of its killers. According to the singers, the killed bear did not cease to exist. Instead, it changed its social status, becoming a member of the human group during the bear feast. The hunters stressed that, when the bear became a member of the hunting group, it should forget its intention to take revenge on the human community. The hunters of Vuokkiniemi emphasised: "do not hate for a long time, / do not scare the Christian people"[15] (*Elkähä viikon vihoko, / kamaloiko*

11 Roy Wagner (1938–2018) was an influential American anthropologist, an expert on the cultures of Papua-New Guinea and author of the pivotal book *The Invention of Culture* (1975).

12 Moiśśeińi Kuśma, or Kuśma Ahońi, was an important *tietäjä* (seer) of the Ahonen or Ahońi family of singers from the village of Hoapovaara in Latvajärvi. He learned its incantations and *Bear Songs* from his grandfather and his father (Spiireińi Moiśśei), who were both skilled *tietäjäs*.

13 The adjective or noun *uros* means "the hero", "the man" or "the male". Here, the masculinity of the bear is underscored, whereas when the bear was awakened from the den it was feminised as a bride.

14 SKVR indicates a reference to a song or incantation from the collection *Suomen Kansan Vanhat Runot* (Ancient Songs of the Finnish People). In this chapter, the SKVR sources are indicated by the number of the volume (SKVR XII2), followed by the number of the song (/6573) and the number of the line (1–2).

15 The name *ristikansa* ("people of the cross", "Christians") means Karelians. The Karelians were Orthodox and many of them were Old Believers (*Старообря́дчество*): Christian religion was a fundamental aspect of their self-identity. However, they continued to perform pre-Christian rituals and to believe in the existence of the *haltias* (guardian spirits). A similar situation could be found in Finland: The Finnish hunters were Protestants, but their folk rituals were still

ristikansa; SKVR I4/1229: 16–17, Vuokkiniemi, Viena Karelia, Russia, 1837; name of singer not mentioned in the manuscript by Elias Lönnrot). The incorporation of the bruin into the human community was functional to avoid the revenge of the bear for its death.

The entrance of the bear into the village marked a significative change in the communicative form of the *Bear Songs*. In Viena Karelia, when the hunters approached the yard of their village or home, a singing dialogue started between the hunters and the mistress of the house or village, or even a group of wives or mistresses (SKVR I4/1225 b.; I4/1227). The conversation was divided into questions (generally by the hunters) and answers (generally the women answered, but they could also ask the hunters about where the prey had come from). In the middle of this dialogue, both the hunters and the wives sang some lines to the silent "guest", the bear. A similar dialogical style was present in the wedding songs: When the groom arrived, the family of the bride and the groom started to sing a set of standard questions and answers. The folklorist Leea Virtanen[16] noticed that the songs of the bear feast have structural and meaningful affinities with the wedding songs (Virtanen 1968, 36–38).

The ritual role of the mistress of the house should not be underestimated, as she stood on the border of the household and the forest, behaving as a guardian and a mediator when the guest from the forestland came inside. This is clearly reminiscent of the role of the female forest *haltias*, the guardians of the woodland.

In Viena Karelia, the mistress welcomed the bear very warmly: "Welcome, *ohto* (the bear), upon your arrival, / honey paw, as you came by" (*Tervet, ohto, tultuosi, / mesi kämen, käytyösi!*; SKVR I4/1253, 1–5, Lonkka, Viena Karelia, Russia, 1834; name of singer not mentioned in the manuscript by Elias Lönnrot). The women sang to the bear as if it was a son-in-law or the groom awaited by them (Tarkka 1998, 115). In Vuonninen, the women welcomed the bear as their groom: "So I waited for you, / as a maiden for a young man, / the red-cheeked one for a spouse, / or the ski for new snow" (*Niimpä mie sinuo vuotin, / niinkuin neiti nuorta miestä, / puna-poski puolisuo, / eli suksi uutta lunta*; SKVR I4/1241, 21–24, Vuonninen, Viena Karelia, Russia, Varahvontta Lesońi,[17] 1872). In Venehjärvi, the mistress sang that she waited for the bear/groom until the ice melted under her feet and she walked until her shoes were broken (SKVR I4/1235, 8–9, Venehjärvi, Vuokkiniemi, Viena Karelia, Russia, Varahvontta Lesońi).

The welcome songs referring to the bear as a groom or son-in-law are particularly interesting because in one of the oldest documents about Finnish bear ceremonialism[18] the whole bear feast was called "The wedding of the bear", and it included a staged wedding: "When the bear had been successfully killed and flayed in the forest, and also the flesh with the skin was brought back home to the settlement, a day was settled upon when the so-called 'wedding of Couvo'[19] (the bear) would be celebrated. For this important celebration, some barley was gathered to brew beer and *viina*.[20] When the arranged day arrived, people gathered in church clothes at a house. Here, a boy was chosen in honour of the bear as a bridegroom and, following the custom of the land, a girl clad in bridal costume was chosen as bride" (SKVR IX4/1096, Viitasaari, central Finland; name of singer not

influenced by the belief in pre-Christian *haltias* (guardian spirits) and syncretic Catholic saints, which the Protestant churches abhorred. Throughout many centuries, the official Catholic, Orthodox and Protestant churches have made many efforts to erase the belief in the *haltias*, but with scarce results in the remote countryside up until the first decades of the 20th century.

16 Leea Virtanen (1935–2002) was a Finnish professor of Folkore Studies at the Univerity of Helsinki, an expert on Finnish and Estonian traditions, children's stories, and urban and paranormal legends.

17 Varahvontta Lesonen or Varahvontta Lesońi or Feropotij Terentjev Lezhev was a singer and the guide of the photographer I. K. Inha when he travelled in Viena Karelia. He learnt his Bear Songs from his father Tero Lesońi, who was an expert singer and hunter.

18 *Text of Viitasaari* (after 1750).

19 *Couvo* or *kouvo* means "the bear" or "the deceased", "the ghost".

20 *Viina* or *paloviina* (*bränvin* in Swedish) is a hard liquor or clear spirit drink made of barley.

mentioned; Pentikäinen 2007, 74; 2014, 424). However, the bridal couple was almost never mentioned in the 19th or 20th century sources. Was the presence of the bridal couple in Viitasaaari a local tradition, restricted to certain villages or areas? Or was it a once common tradition that disappeared before the 19th century?

Even though we do not have many sources that mention the presence of a bridal couple or a bride, in some 19th-century North and Viena Karelian *Bear Songs* singers clearly referred to the bear feast as a wedding of the bear, or sang to the bear as if it was a groom or bride.

The singer and hunter Juhana Kainulainen[21] invited the forest spirits to the feast by singing: "Honeyed matron of Mehtola,[22] / golden king of the forest,[23] / come now to the wedding of your ox, / to the feast of your long wool" (*Mehtolan metinen muori, / metän kultanen kuningas, / tule nyt häihiin härköisiis, / pitkän villaisi pitohon!*; SKVR VII5/3390, Villala, Humuvaara Kesälahti, North Karelia, Finland, 1828). The feast was presented to the forest spirits as the wedding of an ox, for the bears were often mentioned as the "cattle" (*karja*) of the forest spirits (Piludu 2019, 63–66). The latter song is interesting because it reveals that the spirits protecting the bear were also invited to the feast and the wedding.

The wedding was a way to humanise and personalise the bear, making the bruin a member of the village community and honouring it with its participation in the most important of the human ceremonies. However, the bear was a bride or groom only during the feast. Otherwise, the bruin's identity was mimetic: The bear was a humanlike being, but it did not become completely human, and its soul was supposed to return to the forest and regenerate there after the feast.

Mimesis depends on the existence of difference, and the imitator (in this case, the humanised bear, "imitating" the role of a human groom in the women's songs and in the bear wedding) remains a being "in between" identities (Willerslev 2007, 12). The imitator (the bear) is an imperfect copy, "a poorly executed ideogram" (Taussig 1993, 17) of the original (the human groom). The bear is an imperfect "copy", because it retained a potentially dangerous part of its alterity when it entered the village and the house: It was feared because it could possibly attack the cattle or cause an illness. The incomplete and mimetic wedding of the bear reminds us of the episode of the hunters' seduction of, or wedding to, the female forest spirits present in the songs of the bear hunt: In this case, the hunters were temporarily accepted as lovers and kin of the forest people to obtain the prey, but they maintained their identity as humans and hunters.[24]

The protection of the cattle and the women

After the welcoming songs, the hunters brought the bear skin, the bear head and the bear meat into the cabin and, more specifically, into the *tupa*; a living room with a kitchen, a brick oven, and a table. In Finland and Karelia, the *tupa* was the centre of all the indoor activities engaged in by the women and other members of the family. In eastern Finland and Karelia, it was also the main bedroom: The family slept on the wall benches, or on a bed on the top of the oven (Räsänen/Räsänen 2008, 335).

21 Juhana Kainulainen (1788–1847) was a famous *runolaulaja* (singer), *karhuntappaja* (bear hunter) and *tietäjä* (seer). Elias Lönnrot, the collector and editor of the Finnish epic poem *Kalevala* (1849) met Kainulainen in 1828 and transcribed 57 Kalevalaic songs and incantations, including the *Bear Songs* (Haavio 1948, 122–132). The pine tree where Kainulainen hung bear skulls is still alive in Kesälahti and is now a tourist attraction (called *Lönnrotin petäjä*, the "Pine of Lönnrot").

22 Mehtola or Metsola (The Forestland) was a name of the otherworldly forest governed by the forest *haltias* (guardian spirits). The matron of Mehtola was the Mistress of the Forest, the main female *haltia*, who was called Mielikki in some songs.

23 "Golden king of the forest" was one circumlocution for Tapio, the Master of the Forest, the main male forest *haltia*.

24 On the concept of mimesis, see Piludu, this volume, on the songs and rituals of the Finno-Karelian bear hunt.

In Viena Karelia and Finland, the bear killer exhorted the boys and girls to stay away from the doors when the bear was brought inside: "Go away, boys, from the porch, / maids, from the doorjambs, / when *ohto*[25] is entering the *tupa*!" (*Pois, pojat, porštuošta, / piijat, piht'ipuol'isešta, / ohon tullešša tupah!*; SKVR I4/1220a, 6–7, Kivijärvi, a Viena Karelian village in the territory of Finland, 1910, Maura Marttińi[26]). Because the bear was considered an older, male guest of honour, or a groom, the young and unmarried members of the village were expected to show their respect, leaving the places around the door free (see Fig. 2). The elders represented authority, so young people were supposed to give them precedence on the road and at the door (Siikala 2016, 101–102).

The presence of the mistress of the house (*emäntä*), a mature and authoritative woman, was allowed in the cabin and the *tupa* during the feast; she continued her singing dialogue, as she represented the household and its ownership. According to the folklorist Satu Apo, the women ensured the integrity of the farm household, and they acted as guardians and gatekeepers of the human habitat, the village, and the house (Apo 1998, 72–73; Stark-Arola 1998b, 39). This role not only included defending the household and the cattle, but also the proper welcoming of foreigners and the official acceptance of the guest, hosts and grooms, such as the bear. The women carefully controlled who and what entered and left the village.

However, the women protected the cattle when the bear passed across the threshold. The appearance of the bear corpse in the yard was considered a potential danger for the cattle, as the people feared a bear attack as a revenge for the killing of the bruin. This revenge could also be caused by other bears, informed about the kill of their "brother". The double role of the women (mistresses of the house and keepers of the cattle) could explain the apparently ambivalent positions and attitudes of the women towards the bear. The Viena Karelian hunters sang to the women, warning them: "Beware now, poor wives, / that the cattle won't vanish, / that the 'grains[27] of the mistress' (the cattle) won't disappear, / when *ohto* (the bear) is coming into the *tupa"* (*Varokaatte nyt, raukat vaimot, / ett'ei karja kaipastuisi, / viipastuisi emännän viljat, / ohon tullessa tupahan*; SKVR I4/1219b, 32–35, Niskajärvi, Viena Karelia, Russia, 1915, Hovatta Lesońi[28]).

Sometimes, the hunters exhorted their wives to guard their genitals too, when the bear entered the village. The singer Lukkańi Huotari[29] sang about the risk of a bear's sexual assault: "Beware, you poor wives, / when I move my golden one, / so that the hair (the pubic hair of the women, and the cattle) won't vanish, / the mistress' wool (the pubic hair of the women, and the cattle) won't fail, / when *ohto* (the bear) is coming to the fireplaces, / the honeyed dick (the bear) to the estate" (*Varokate vaimo raukat, / kuin ma kultańi kuletan, / jott' ei karva kaipastuise, / epeä emännän vil'l'a, / ohon tullessa tulilla, / kartanoh kalun met'isen*; SKVR I4/1206c: 9–14, Ponkalaksi, Viena Karelia, Russia, 1877).

The folklorist Lotte Tarkka stresses that in this song the words for the female sex (*karva*, "the hair" and *emännän villa*, the "wool of the mistress"; the vagina with pubic hair) could also be interpreted as a reference to the cattle (*emännän vilja*, "the grain of the mistress", the cows); therefore,

25 *Ohto* was one of the most common honorary names of the bear.

26 The family of Maura Marttińi came from Vuokkiniemi (Viena Karelia, Russia). She was a singer and *tietäjä (*seer); her son, Iivana Marttinen, was a folklore collector who has also transcribed this song. She learnt her songs and incantations from her grandmother (Outi Jyrintytär Remsunen, a *tietäjä*) and grandfather (Outokkainen).

27 The world *vilja* (grain) was very polysemic; in the songs, it means both grain (product of the field), the cattle (the "grain" of the mistress), and even the prey of the hunt (*jumalan vilja* means the "grain of the god [the *haltia*, guardian spirits]", the bear or some other forest animal).

28 Hovatta Lesońi Teronpoika was the brother of Varahvontta Lesonen or Varahvontta Lesońi and the son of Tero Lesońi, who was a skilled hunter and singer. He was born in Venehjärvi and moved to Niskajärvi. According to the folklore collector Samuli Paulaharju, Hovatta was a *tietäjä* (seer) and lived in a poor house.

29 Prokkoni Lukkańi or Ponkalahden Huotari was a fisherman from the village of Ponkalahti. The folklore collector Axel August Borenius (1846–1931) transcribed a certain number of songs and incantations from him.

the menace represented by the bear was double. In Karelia and Finland, a very intimate relationship existed between the cattle, femininity, and female genitals and sexuality (Tarkka 1998, 122). A ritual called *harakoiminen* was usually performed to protect cattle during the grazing season: A woman climbed on to the gate and the cattle passed below her legs and sex. It was a preventive protection – after the ritual the female force (*naisten väki*) present in her genitals remained attached to the cattle. This powerful, strong sexual force, and the "scent of the women", protected the cows from bears for the entire summer. The bear was "ashamed" by the female force and scent – it did not dare to touch the cows.

A woman protected what belonged to her house (cows) and what moved from the "inside" dimension of the home to the "outside" forestland (Stark-Arola 1998b, 39–40). The female force was considered particularly effective against bears. In the forest, a woman could even expose her sex and pronounce an incantation to embarrass and startle a bear (Piludu 2019, 108). In Sodankylä, this type of "exposure" was followed by a short incantation: "Look at that, and shame, rascal!" (*Katto tuohon ja häpiä, koranus!*; SKVR XII2/6512: 1, Sodänkylä, Lapland, Finland, 1920, Rantalan Joopi).

However, when the bruin itself entered the village as a guest of honour or a groom, it had a position of power, and it could be sexually aggressive with women or pose a danger to the cattle. According to Lotte Tarkka, in Lukkańi Huotari's song the arrival of the bear in the household could be described as including a potential danger of sexual penetration or harassment (Tarkka 1998, 122).

The singer Matti Karjalaińi called upon the wives to watch out for their "womb" when the bear entered the cabin: "Guard, poor wives, / protect your wombs / when *Ohto* (the bear) comes to the fireplaces / the furry muzzle forces his way!" (*Varuotos, vaimo raukat, / kokuotos kohtuon, / Ohon tullessa tulille, / karvaturvan tungetessa!*; SKVR I4/1254: 22–25, Lonkka, Viena Karelia, 1892). The advice was probably intended to protect against the menace of a bear's sexual assault. We can also suppose that this could be a humoristic version of the standard lines: "furry muzzle" (*karvaturpa*) in Karelian sounds like a funny, somewhat erotic metaphoric name for the bear.

However, a different and more dramatic explanation is also possible. The singer Anni Lehtonen[30] from Vuonninen explained: "[…] when the bear was brought into the cabin, a pregnant woman should not even be in the room. It is not so contagious to other women [or: "the bear does not seize, grip, attack other women"][31], only to pregnant ones" (*Kun karhua tuuvah pirttih, niin ei pie olla paksun naisen huonehessakaan. Ei muihin naisih niin tartu, kuin paksuh*; SKS KRA Samuli and Jenny Paulaharju 18553, 1932, Vuonninen, Viena Karelia, Russia, manuscript from 1916).[32] It seems that an illness called "forest hate" or "bear hate", coming from the meat or fur of the bear, could be particularly contagious for pregnant women. Lotte Tarkka stresses that, in Viena Karelia, the bear was dangerous for child-bearing women, and a pregnant woman was more susceptible to being infected by the bear's force (Tarkka 2013, 354). In Viena Karelia, a pregnant woman walking in the forest also could lose her unborn male child to the bear, if it identified the foetus as a potential hunter in the future (Virtaranta 1958, 309, 322; Paulaharju 1995, 29; Tarkka 2013, 354).

30 Anni Lehtonen (in Karelian Ańńi Lehtońi) was one of the most important Viena Karelian singers. Her grandfather was the famous *runolaulaja* (singer), *tietäjä* (seer) and hunter, Ontrei Malinen. The collector Samuli Paulaharju transcribed 450 songs and incantations by Anni Lehtonen. She learned her songs from the sons of Ontrei and from the great *tietäjä* Ohvo Homanen of Vuokkiniemi and from Martiska Karjalainen, the brother of the grandfather, Ontrei (Haavio 1948, 26–31; Kaukonen 1984, 24–25).

31 The verb *tarttua* is polysemic: it means "seize, attack" (in case of an animal) and also "be contagious" (in case of an illness). The context of the sentences allows both interpretations.

32 The sources from the SKS KRA (Archive of Folk Poetry of the Finnish Literature Society) are mentioned indicating: the name of the collector; the number of his manuscript and its year; the village and its parish; the name of the informant and, sometimes, some basic information about him (age and profession).

The fact that the dead bear was still considered dangerous made the entrance of the bruin into the cabin a very delicate ritual. The hunters sang about the honours reserved for the bear. The Karelian hunters asked the mistress if the maids had washed the cabin "for the upcoming guest" (SKVR I4/1220a: 11). The singer Jeremie Malinen[33] reassured the bear: "There you will not be treated badly, / there you will be treated well, / the porches have already been washed well" (*Ei siellä pahoin pietä, / siivoin on siellä piety: / jo on pesty siivoin sintsot*; SKVR I4/1249, Vuonninen, Viena Karelia, Russia, 1915). Jeremie asked the mistress: "Are the liquors made for a long time, / the barley ale, for a long time?" (*Onko tehty viikon viinat, / kauvon ostraset oluot?*; SKVR I4/1249: 54–58, 1915). The abundance of alcoholic drinks stressed that the bear was a guest of honour.

The role of the women in cleaning the cabins and the village was a vital feature of many bear ceremonials. Tanner stresses that, among the Mistassini Cree[34], the women were supposed to keep the camp clean during the bear hunt, "since it was believed that the animal will not allow itself to be caught otherwise" (Tanner 1979, 146). In Finland and Karelia, cleaning the house in advance was a symbol of respect for a guest of honour (the bear, or a groom).

The offering of alcoholic drinks to the bear is one of the most significative elements of the Finno-Karelian bear feast. In Heinävesi, the hunters offered a glass of spirits to the bear fur (SKS KRA Tauno Mäkipalo (Mohell) 523, Heinävesi, North Karelia, Finland, 1933). The bear killer Loasari Lesońi[35] sang that ale transformed the whole room into a merry "singing band": "I take [you] to my room of the barley spirits[36], / I carry [you] to the *tupa* (dining room) of the ale. / There even the boards sing, / even the windows [are] happy" (*Viene[n] viinahuoneheni, / kantane[n] oluen tupahan. / Jopa siellä laulo lautsat, / jopa ikkunat iloiset*; SKVR I4/1233: 110–113, Venehjärvi, Viena Karelia, Russia, 1872). The feast was not only portrayed as the wedding of the bear, but also as a drinking party (*juominki*) with lots of singing. The songs were an important way to honour and please the bear. However, traditional weddings were also marked by an abundance of ale (*olut*), drinking and singing, so the representations of the bear feast as a wedding or a drinking party could overlap in *Bear Songs*. Barley spirits and ale were the drinks that inspired folk singers, and the best of them refused to start singing if no ale was offered (Tarkka 2013, 199–200). A folk seasonal celebration, wedding or bear feast was not a "real one" without ale. In Lonkka, the feast was presented as a celebration in honour of the bear and the forest *haltias* who protected the bruin and the trees: "Now there are the feasts of the rowan,[37] / the drinking parties of Tuometar (the Bird-Cherry Lady)[38]" (*Nyt on pihlajan pitoja, / Tuomettaren juominkia*; SKVR I4/1253: 40–41, Lonkka, Viena Karelia, Russia, 1834, name of singer not mentioned in the manuscript by Elias Lönnrot). In the *Bear Songs,* the house became a mythical place in which the boards sang, and the windows rejoiced and the forest *haltias* were invited to drink.

33 Jeremie Malinen, Jeremie Jyrkini, Pistonsuun Jeremie, or Kuotkuen Jeremie was the youngest son of Jyrki Malinen. He was a smith, a skilled boat builder, a fisherman and a hunter. According to the folklore collector Borenius, he learnt his songs from a poor beggar from Vuonnien, who was called *Musta Roto* (Black Roto) (Haavio 1948, 22).

34 The Mistassini Cree are a Native American people living on the shores of Lake Mistassini, in Quebec (Canada).

35 Loasari Lesońi was a skilled fisherman and a famous bear killer (*karhuntappaja*) from Venehjärvi. He killed 16 bears. Loasari was the son of Ontippa or "Näppy-Jyri" Lesońi, a *tietäjä* (seer), a hunter who killed 24 bears. The Lesonen family came from Kuusamo (northeastern area of North Ostrobothnia, on the border with Russia and the Finnish region of Lapland). According to the folklore collector Karjalainen, they learnt their songs "from Lapland" (Kaukonen 1984, 75–76).

36 *Poltoviina* (*brandvin* in Swedish) is a distilled liquor or clear spirit made of barley.

37 The "feast of the rowan" means the feast of the forest spirits protecting the trees (such as the rowan and the bird-cherry).

38 Tuometar was a forest *haltia* (guardian spirit) and a mother of bears.

The place of honour reserved for the bear fur was very important. Jeremie Malinen sang: "Where do I take my guest[39] now? / Where do I carry my famous one? […] / I will take him to the end of the rear bench[40]" (*Mihin nyt vienen vierahani, / kuhun kuuluni kuletan?* […] / *Vien perähän penkin peähän*; SKVR I4/1249: 46–47, 53, Vuonninen, Viena Karelia, Russia, 1915). The "rear bench" (*peräpenkki*) and "rear corner" (*peritsuppu* or *peränurkka*) was the place reserved for the male head of the family or the most important guests (like a groom; see Fig. 3); this place was also at the head of the table (Kemppinen 1978, 228). The Viena Karelian bear killer, Suolahen Ontippa (Ontippa Lesońi)[41] added some important details: "The fur was brought to the rear bench (*peripenkki*) under the Orthodox icons. It was rolled on a birchbark knapsack (*kontti*) or inside it. It was carried into the yard with a sled (*ahkio)*[42]" (SKS KRA Samuli Paulaharju 6451, Vuonninen, Venehjärvi, Viena Karelia, Russia, 1917).

In Viena Karelia, the rear corner (*peritsuppu*) was the holiest place of the *tupa* room, as the Orthodox icons were hung there.[43] During Karelian funerary ceremonies, the deceased were carried on the "board of the corpse" (*ruumislauta*) under this corner and in front of the Orthodox icons. The relatives would light some candles and stay up, watching the corpse for three nights of praying, crying, and singing traditional funerary laments. The icons and the relatives thus protected the soul of the dead from the Devil (Kemppinen 1978, 266). Putting the bear's fur under the icons, the Karelian folk honoured it as a deceased human and – at the same time – as the most revered of the guests of honour of the house. Here we find an interesting juxtaposition between bear ceremonialism and popular Orthodox faith. Choosing a place of honour for the dead bear was also important in the bear ceremonials of other peoples. The Mansi[44] hunters put the bear fur below the sacred "rear wall"[45] of the house, below the chests that were used for making offerings and sacrifices to the guardian spirits of the cabin (Kannisto 1907, 346).

The dangers of eating the bear meat and the protection of the alder tree

In the Finno-Karelian bear feast, all the meat and the organs of the "guest of honour" were eaten by the hunters and the villagers. The bear meat, the bear grease and the bear paw were considered a delicacy (Piludu 2019, 242–246; cf. Kirkinen, this volume). However, eating the bear meat was dangerous, because it contained a contagious force that could bring a supernatural illness. An informant, Torvelainen from Sulkava, related that the bear meat should be smoked with alder branches "so that

39 *Vieras* (the guest), is an honorary name for the bear, as is *kuulu* (the famous one).

40 The rear bench was under the rear corner (the holy corner of the icons). In Karelia, the rear bench was a place of honour reserved for important guests, the grooms, or for the head of the family. The singer emphasised that he reserved the place of honour for the guest (the bear).

41 Ontippa Lesońi or "Näppy-Jyri" Lesońi was a *tietäjä* (seer) from Venehjärvi, and a bear killer who had killed 24 bears. He was a "strong man" and an "overeater". The Lesonen family came from Kuusamo (northeastern area of North Ostrobothnia, on the border with Russia and the Finnish region of Lapland). According to the folklore collector Karjalainen, they learnt their songs "from Lapland". He was the father of Loasari Lesońi, another famous bear killer (Kaukonen 1984, 75–76).

42 The *ahkio* is short, wooden sled used for transport (of game animal, fishes, food), usually pulled by a skier, a dog or, in Lapland, a reindeer.

43 The icon corner, the sacred corner or the red corner is a small place of worship present in the rural homes of Orthodox Christians, such as the Viena Karelians. It generally includes the icons of Mary with Jesus the Child, as well the patron saints of the family.

44 The Mansi (in older literature: the Vogul) are an Ob-Ugrian people. Most Mansi live in the Khanty-Mansi Autonomous Region (Okrug) in western Siberia (Russia). See Wiget/Balalaeva 2022.

45 The rear wall was a sacred place for the Mansi, but in this case the holiness of the *locus* was not related to Orthodox icons but to the fact that it was the wall of the guardian spirits who protected the house and the family.

the meat was not poisonous, but like sheep meat" (SKS KRA Paulaharhu 39755; Paulaharju 1953, 205). Alder was used in many other ways to neutralise the "poison" of the bear meat (Piludu 2019, 242–246). In Finland, however, alder was also considered a bad tree and it is described as being created by the devil. In western Finland, the people believed that the cross of Jesus had been made of alder; therefore, in the popular European Christian faith the tree became a dangerous one (Krohn 1917, 50; Guenat 1994, 129). Even so, the alder was considered powerful for its red fluid, which was associated with human blood (Aaltonen 1915, 130; Guenat 1994, 129–130). The evil or dangerous forces contained in the alder could also be used for protective purposes; they could be apotropaic, and the tree was used to drive away other evil forces (Guenat 1994, 130). Aaltonen notes that, in Finland, alder was used in a great number of rituals associated with healing, agriculture, cattle breeding, hunting, and fishing: "It seems that the fundamental feature in the use of alder is that it works as a kind of fastener, something that securely locks up, ties and rules its bad spiritual power, which could be used at any given time" (Aaltonen 1915, 121). In Finland, Scandinavia and central Europe (Germany), the alder was also used to drive away bad spirits or the souls of the dead (Guenat 1994, 130). Considering the multitude of ritual uses of the alder, is not surprising that the tree was also used to expel the poison that was believed to be present in the meat of the bear.

The theory about Karelian and Finnish totemic clans and the refusal to eat bear meat in Viena Karelia

An influential theory by the anthropologist Matti Sarmela is strictly related to the ritual eating the bear meat and to some taboos about eating the bear meat in Karelia. His theory is often mentioned in scientific literature about Finnish bear ceremonials and in some books popularising these scientific debates (Hyry et al. 1995, 20–21; Pulkkinen 2014, 220–223; Pulkkinen/Lindfors 2016, 50). Sarmela stresses the importance of the discovery of Stone Age bear-headed axes and elk-headed ones (see Figs. 4–5) in a large area from Scandinavia to the Urals (Carpelan 1974; 1975), and he supposes that two totemic clans existed in Finland and Karelia (Sarmela 2009, 93; Pentikäinen 2007, 3).

Sarmela adds that the famous Latin writer Cornelius Tacitus (AD 56–120), in his *Germania* (*c.* AD 98) wrote about two mysterious peoples living near the people of the Fenni (Pulkkinen/Lindfors 2016, 38). According to Tacitus, the *Hellusios* and *Oxionas* have the faces and expressions of men but the bodies and limbs of wild beasts. Sarmela elaborates a theory by the Latinist Tuomo Pekkanen that: a) the name *Oxionas* may derive from the Finnish word *oksi* (*otso*, *ohto),* meaning "bear", and b) the name *Hellusios* may derive from the word *elg* ("elk"), found in many languages, for example, the Ancient Greek *ellós* (Sarmela 2009, 94; cf. Pekkanen 1983; 1984; Pentikäinen 2007, 23).

It is unclear if the Fenni of Tacitus were the Sámi, another Finnic people living somewhere in Fennoscandia, or another Germanic people. Tacitus himself wrote that he was not sure if the Fenni were Germans or Sarmatians (De Anna 1988, 49–50). Some modern scholars have argued that the Fenni lived in Lithuania rather than in Finland or Sámiland. In the Scandinavian languages, Finn is a common name for Sámi (Finnmark in Norway) or Finns (Finland). As for the *Hellusios* and *Oxionas*, practically no other historical source mentions them. Sarmela speculates that the *Hellusios* and *Oxionas* were two large totemic clans, the Finns and the Karelians, who wore the skins of their animal ancestors – the elk (*Hellusios,* the Finns) and the bear (*Oxionas*, the Karelians; cf. Sarmela 2009, 93).

Yet Tacitus did not write about peoples wearing skins but about monsters (animal-human hybrids): The *topos* was very common in Ancient Greek and Latin historical and geographical literature dealing with fantastic barbarian peoples living at the edge of the world (De Anna 1988, 55). He was

not historically accurate and himself very doubtful about the existence of the two peoples.[46] Sarmela defines the totem as an animal or plant ancestor of a group of people. This "totemic alliance group" allegedly shared a myth about the origin of the animal and a prohibition against eating the meat of the totem animal (Sarmela 2009, 94).

At this point, as already stated, Sarmela theorises that in prehistory the Finns considered the elk as their totemic ancestor and the Karelians had the bear as their ancestor (Sarmela 2009, 93). I am sceptical about this theory: Finland and Karelia are large geographic areas, and the assumption of a totemic bear alliance covering the whole of Karelia and an elk alliance covering the whole of Finland presupposes a belief in the existence of a totemic "national consciousness" in Finnish and Karelian prehistory.

The archaeological evidence of Sarmela's theory is weak, as he does not consider the fact that the prehistoric bear-head axes have also been found in Finland, in Sweden, and in Onega Karelia (Huurre 2001, 290–291). Archaeologists have found both bear-headed and elk-headed axes (see Figs. 4–5) in a huge geographic area from Scandinavia to the Urals, but most of these axes have been found in Finland and Onega Karelia (Huurre 2001, 290). Another problem is that in Finland the bear-headed axes were more common than elk-headed ones (Huurre 2010, 292). The archaeologist Matti Huurre stressed that bear-headed axes and elk-headed ones could have had different religious or cultural uses: They could be symbols of totemic clans and families, status symbols of local chieftains, or objects used in ceremonials related to hunting (Huurre 2001, 293).

Elk-headed axes, staffs and other objects were found in the whole Scandinavian and Baltic area, Lithuania included. Such staffs or axes seem to be represented in some petroglyphs of Alta (Northern Norway) and Nämforsen (central Sweden): Human figures use them killing or sacrificing an elk or performing other rituals involving elks (Iršėnas et al. 2018, 133–136). Although the elk-headed and bear-headed axes and staffs were important in the religion of the Stone Age and in a huge Nordic geographic area, the exact ritual use of these objects remains open to scientific debate and speculation.

Sarmela's "totemic alliance" concept (a totemic system in which an animal is the ancestor of large human groups living in huge geographic areas) is very uncommon in anthropological literature: More typical is the presence of two or more moieties (descent groups) with two or more animal or plant ancestors inside the same ethnic communities or clans that are numerically very small, although the dimension of the geographic area varies a lot (Descola 1996).[47] The prohibitions related to totemic beliefs are most variable: Sometimes a moiety has a set of animals or plants that should not be eaten, and these species may or may not include the ancestor animal or plant. The term "totemism" is one of the most discussed in anthropological literature, and it has been thoroughly analysed and redefined over recent decades.[48] However, two of the most renowned scholars of totemism, Claude Lévi-Strauss (Lévi-Strauss 1964; 1966) and Philippe Descola,[49] do not consider totemism as a way to distinguish

46 Tacitus, *Germania*, Book 1, Chapter 46: *Cetera iam fabulosa: Hellusios et Oxionas ora hominum voltusque, corpora atque artus ferarum gerere*: *quod ego ut incompertum in medio relinquam* (http://www.thelatinlibrary.com/tacitus/tac.ger.shtml#1). English translation by Alfred John Church and William Jackson Brodribb [1864–1877]: "All else is fabulous, as that the Hellusii and Oxiones have the faces and expressions of men, with the bodies and limbs of wild beasts. All this is unauthenticated, and I shall leave it open" (http://www.sacred-texts.com/cla/tac/g01040.htm).

47 By contrast, it is common that only one animal became the main symbol of peoples with a strong national consciousness and written history, such as the Ancient Romans, who had the wolf suckling Romulus and Remus as the coat-of-arms of their city, army, and political power (the Senate of the Roman People, SPQR). However, the she-wolf of Rome was not a totem or ancestor *strictu sensu*, because she was not the biological mother of the twins that founded the city, but she was surely a powerful animal who fed them when they were abandoned. In Rome, the wolf was related to warfare and the god Mars, so it was a symbol of the belligerent character of Rome and of its army (Rissanen 2018).

48 See Descola 1992; 1996; 2005; Århem 1996; 2016, 6–9; Brightman et al. 2014, 16–19; Viveiros de Castro 2009; Willerslev/Ulturgasheva 2014.

49 Philippe Descola (born in 1949) is a French scholar renowned for his studies of the Achuar, a Jivaroan people of Amazonia, and for his contribution to anthropological theories about environment.

entire peoples from each other (such as the Karelians from the Finns), but to define moieties, clans, social groups, or other social identities (warriors, hunters, healers) inside the same – and often small – ethnic group, using two or more animals and plants to build up a web of exogamic relations. In one of his articles, Descola defines totemism as a classificatory system to create distinctions within the same human society (ethnic group) based on the differences between animal species (Descola 1996, 88; Willerslev/Ulturgasheva 2014, 49). According to Descola, totemism models human society after nature (Descola 1996, 88; Århem 2016, 7).

Sarmela states that the prehistoric Karelians had a bear ancestor because, according to him, the people from Viena and Olonets Karelia did not perform any bear rituals or *Bear Songs* (Sarmela 1991, 224), and they did not hunt the bear (Sarmela 1991, 225). This information is incorrect. In western Viena Karelia, the collectors transcribed a great number of *Bear Songs* (79 in all), and these are often longer than the ones transcribed in Finland (SKVR I4/1189–1267). Sarmela mentions that, in Viena Karelia, no information or songs about the ritual of the bear skull were collected (Sarmela 1991, 224; 2009, 79). However, Viena Karelian singers, including the famous Iivana Malinen, described the ritual of the bear skull and sang some of the most typical lines related to this ritual (SKVR I4/1245b; I4/1245c; I4/1253: 16–17, I4/1943). Sarmela states that Viena Karelians did not eat bear meat at all.[50] Yet the Karelian sources and songs contain several references to eating and cooking bear meat, as we have seen in this chapter.[51]

For the theoretical problems in the definition of totemic beliefs and the evident inaccuracy in dealing with Viena Karelian sources, I consider Sarmela's historical reconstruction very problematic. It is not easy to compare archaeological findings, Ancient Latin written sources (Tacitus) and ethnographic songs and information collected in the 19th and 20th centuries: The historical distance between the ages of the sources is huge.

However, Sarmela is right in stressing that the Stone Age bear-headed and elk-headed axes are historically meaningful because they are valuable archaeological sources demonstrating that the bear and the elk were animals with a deep meaning in the remote prehistory of Fennoscandia and North Russia (an area inhabited by other Finno-Ugric peoples). The axes are in good condition, so they were not used in battle as normal weapons. They were probably ritual objects or objects representing the social status of a chief or family (Pentikäinen 2007, 3). Unfortunately, we do not have any written source that demonstrates for certain that the bear or the elk were considered ancestors or totems in Finno-Karelian prehistory. However, the idea that both the elk and the bear could be two ancestors of two moieties of the same people is a hypothesis that could be evaluated by making comparisons between archaeological and ethnographic material. However, we should be very careful that we propose explanations based on valid sources rather than on Latin historical literature on fantastic barbarian peoples and monsters.

In Viena Karelia, there were persons – generally women, like in Finland – who avoided eating bear meat. On the one hand, eating the bear was considered a "sin", as it was part of a "pagan" or pre-Christian ritual that was abhorred by the Orthodox church or by the Old Believers, who were a very conservative Orthodox group that had very strict rules about eating (Pentikäinen 1999). On the other hand, the anthropomorphic features of the bruin's body were considered problematic, as they were like those of humans – eating the bear was compared to anthropophagy (see Fig. 6). However, eating the bear (or avoiding eating it) was generally a personal or local choice, not a general prohibition that applied to the whole territory of Viena or Orthodox Karelia. This refusal seems to relate to the anomality of the bear and its humanlike features, not to a prehistoric totemic system based on the belief that the bear was the only animal ancestor of all Karelia.

50 Sarmela 1991, 225. This idea seems to be based on the statements by Kaarle Krohn about the Orthodox Karelians' prohibition against bear meat (Krohn 2008, 162) and Virtaranta's Karelian informants (Virtaranta 1958, 313).

51 See, for example, SKVR I4/1245: 10–16; I4/1242b: 10–16.

The information about women eating bear meat or not varied from one village to another. It seems that in some places in Finland and Viena Karelia the women almost categorically refused to eat bear meat, while in other villages they ate it, albeit after the men. Pregnant women avoided contact with bears, as the bear soul could kill the unborn male child in the womb, preventing him from growing into a hunter.

The local behaviour or the women's decision to avoid eating bear meat was also based on the anomalous nature and ambiguity of the bear's identity: It was a wild animal that had human features and potentially human origins.

In 1958, Pertti Virtaranta[52] published a book with his interviews and conversations with Viena Karelian women about the prohibition against eating bear meat. Oksenia Nykänen from Akonlahti said: "About the bear, it was told that the bear is a bewitched person. The bear, when it is skinned, is like people. For this reason, bear meat was not eaten" (Virtaranta 1958, 313). Domna Huovinen[53] from Vuokinsalmi (Kontokki) was convinced that the bear originated from humans, because when it was skinned its body resembled a human one, and its "toes are like human toes" (Virtaranta 1958, 313). Domna added that in Finland the bear meat was eaten, but this was not the case in their Viena Karelian village, because it was a sin (Virtaranta 1958, 313).

Because the bear was considered a humanlike being or a human transformed by sorcery into a bruin, eating it was considered by these Karelian informants to be an abominable sin, akin to anthropophagy. The bear was a very anomalous creature, as it was a wild animal of the forest and it was considered an offspring of the forest spirits, but it had potential human origins according to other folk beliefs. In other words, the bear did not fit into normal categories (Douglas 2002, 47). Mary Douglas[54] emphasises that what is anomalous and ambiguous is also potentially disturbing, dangerous, and polluting (Douglas 2002, 48–49). In some cases, as the mentioned Domna Huovinen illustrates, the ritual answer to the bear's anomality was negative, resulting in the refusal to eat its meat. However, we must consider that Virtaranta's interviews were done quite late, in the 20th century: The memory of bear ceremonialism was fading away. According to the *Bear Songs* of the 19th century, in Viena Karelia eating the bear meat was allowed, but only when performing all the rituals and songs described in this chapter.

Eating the organs of the bear's head: Sharing the same mind and song

In Karelia and Finland, eating the organs of the muzzle was one of the most delicate moments of the whole feast. The head of the bear was the most powerful part of the bruin, full of bear force (*karhun väki*), and the eating of it was probably reserved for the men or hunters. Iivana Malinen sang: "I take from *ohto* his tongue, / to be my tongue,[55] to be my mind,[56] / for me to sing the kindred song, / [to be] joy for the sitting places,[57] / singing I eat the eye from *ohto,* / lilting, I dig out the ear, / rejoicing,

52 Pertti Virtaranta (1918–1997) was a Finnish linguist and professor of the Finnish language. He studied the Karelian and Veps languages and collected a huge number of folk stories in their original dialects from Karelia, Finland, Tver Karelia and from the Finno-American communities.

53 Domna Hillipantytär Huovien (1878–1963) was a Viena Karelian singer, born in Vuokinsalmi, who moved to Kuivajärvi (a Viena Karelian village in Finnish territory). She was famous for her laments (*itkuvirret*) sung at Karelian funerals or weddings.

54 Mary Douglas (1921–2007) was a British cultural and social anthropologist who worked in the United States for 11 years. She is famous for her theories on purity and impurity and the notion of dirt and for her classic monographs *Purity and Danger* (first edition 1966) and *Natural Symbols* (1970)

55 The word *kieli* is polysemic; it could mean "tongue" or "language".

56 The word *mieli* is polysemic; it could mean "mind", "mood", "desire", "agreement" or "pleasure".

57 The singers and the audience were sitting on the benches at the table, eating the bear meat and organs.

I dismember" (*Kielenpä otan oholta, / kielekseni, mielekseni, / laji virttä laulaakseni, / hoksi istuma sijoille, / laulellen syön silmän oholta, / koikaten korvan koverran, / ilon lyöen irtauttele*; SKVR I4/1245: 10–13, Vuonninen, Viena Karelia, Russia, 1888).

Matti Sarmela emphasises that, by eating the ears and eyes of the bear, its powerful senses were transferred to humans (Sarmela 1991, 218, 232). Lotte Tarkka stresses that these lines reveal a deep level of communion and physical fusion between the singer, the hunters and the bear (Tarkka 1998, 103). By eating the tongue, the hunters acquired a shared language expressed in the form of a "kindred song" (*laji virssi*), which was considered part of a long tradition, passing from one generation to another in the kin or family (Tarkka 1998, 103–104). If the bear tongue (*kieli*) was used in the singing of a "kindred song", the bear itself was considered a skilled singer. Learning the songs of the bear could be useful for the hunters, as these songs could be the ones used in bear ceremonialism to please the bear and the forest *haltias*. Tarkka observes that "tongue" (*kieli*) in Finnish and Karelian also means "language"; it was eaten to find an agreement with the bruin, or a common "mind", expressed by the Finno-Karelian word *mieli* (Tarkka 1998, 103). The word "mind" (*mieli)* refers to "sense" or "meaning" as well as the "mind, mood, sensibility, aspiration, desires and even memory of the person" (Tarkka 1998, 136).

These lines probably represent the maximum level of mimesis between the bear and humans, as they share the same "mind", "mood", memory, and songs. Nevertheless, the identification is not complete.

The hunters maintained their human identity and they were aware of the alterity and dangerousness of the bear because, in the following ritual phase, they detached the bear's fangs and claws from the skull, depriving it of its "weapons" and using the bear force contained in them for many rituals, including self-protection from other bruins. The teeth and claws were stored and used as powerful amulets (see Figs. 7–8). The hunters took the bear's fangs or teeth with them in their bags during the hunt, as they could be used to cure wounds caused by bears or to neutralise the "poison" in the bear meat (Piludu 2019, 260–262).

Final thanksgiving songs and the hope for the bear's future return

The bear feast often ended with some songs of thanksgiving. In these last songs of the bear feast the members of the villages hoped for a future return of the guest.

The Finnish and Karelian vernacular idea of the bear's "return" or "rebirth" on earth after its death was expressed by the hope that the bruin would again be the guest of the village in the future. The concept of the bear's return to the village is present in the Viena Karelian songs. In the feast of Venehjärvi, the mistress asked God to send another bear in the future: "Let again, God, / another time, true God, / during the life of this mistress / this *auvo* (bear, groom, luck, honour) enter!" (*Annappa on vastaki, Jumala, / toitsiki, totini Luoja, / eleässä tämän emännän, / tämän auvon astuossa!*; SKVR I4/1235: 75–79, Venehjärvi, Viena Karelia, Russia, 1894, Varahvontta Lesońi).

Similar lines were sung in the Karelian wedding songs, when the mother-in-law hoped for new suitors (a new *auvo*, a new groom) for the still unmarried daughters. The polyvalent term *auvo* in this case means "bear", but it derives from its additional meanings of "groom", "beloved" or "desired person", "relative" and "kinsman". In wedding songs or sexual magic, the word means also "luck", "honour", "desire", and "intention" (Tarkka 2013, 346), and it could refer to the sexual desire or the desired boy or girl, groom or bride. In the song, the bear was addressed as a desired groom (*auvo*) who brings "honour" to the village. The polysemic word *auvo* (desire / desired person) reveals a web of connections between the bear hunt and the weddings: The bear was the desired prey in the hunt, as a bride or a groom was the desired "catch" in weddings. The bear was a very important prey, and

the hunters gained "honour" (social respect) and good "luck" in hunting if they performed the whole ritual hunt well. A good groom gave "luck" (prosperity) and "honour" (social respect) to the bride, the mother-in-law, and the family. In the bear feast, the visit of the bear to the house was an "honour" for the whole village.

The proper treatment of the bear throughout a well-organised bear feast was the prelude to the return of the satisfied guest and groom and subsequently a successful bear hunt in the future, followed by yet another joyful feast to please the bruin and the forest spirits. In this sense, the bear feast ensured good luck in hunting.

Conclusions: The multi-layered connection between the bear feast and the weddings

The connection between the bear feasts and weddings was complex and multi-layered. The wedding was much more than a sexual adventure; it was a ritual connected with the building and rebuilding of social ties, and it was a ritual of transformation (Stark 2006, 170–171). By means of a wedding it was possible to unite what was previously separate, such as two distinct families – or the bear and a member of the village. The wedding was a way to redefine social identities.

Lotte Tarkka stresses that, in Viena Karelia, the bear ceremonial recalls both rites of passage and of territorial mobility (Tarkka 2013, 338). In Karelia and eastern Finland, the wedding blended both concepts. Like the bear ceremonial, the wedding included several crossings of boundaries between the groom's village, the bride's village, and the forest in between.

The representation of the bear feast as a marriage in the *Bear Songs* is peculiar to the Finnish and Karelian bear ceremonials. Among many other hunting cultures, the marriage between a bear and a woman is present in myths but is not represented in the rituals (McClellan 1970; Spagna 1998). The most common of the myth plots concerns a girl who fell into a den and married a bear, and they had children or cubs. One day, the brothers of the girl came to the den to rescue their sister, and they killed the bear. The bruin, seeing the brothers of his wife coming, told her all the procedures to organise a proper bear feast and ritual of the bear skull. The story is the aetiological myth that explained why the bear ceremonialism should be organised by the hunters. In certain Ob-Ugrian bear ceremonials, the myth about the primordial union between the bear and a primordial mother was represented with dances and songs (Pentikäinen 2007, 31–42). A version of this myth was collected among the Sámi of Northern Fennoscandia (Edsman 1956). In Finland and Karelia, the aetiological myth was not collected in any village, but it was common to represent the bear feast as a bear marriage or the bear as a groom.

Henni Ilomäki notes that both the bear ceremonialism and the wedding were finalised with a change of social status. In the wedding, the groom and the bride switched their social positions and became husband and wife. The groom took the bride from her house; she left her family to become a member of the groom's family (Ilomäki 1986, 131). In a similar way, the hunter took the bruin from its homeland and its parents (the woodland and the forest spirits) and the bruin became a member of the community of the village during the fictive "wedding" of the bear feast. The difference is that the bride became a wife for her whole life and did not return to her previous home; thus, she passed through a definitive social metamorphosis. By contrast, the bear was married only for the brief time of the feast, and even in this situation it maintained a part of its original alterity and dangerousness. After the feast, the bruin was supposed to go back to its homeland and parents to ensure its regeneration from the bones.[58] This made a new hunt possible, with a future feast and wedding.

58 See Piludu, this volume, on the Finno-Karelian bear skull rituals.

Bear ceremonialism, weddings and funerals had other important shared elements and analogies in common: They were carefully divided into different phases, including a procession and a communal feast with an abundance of food, drinks and collective singing. Nevertheless, weddings and funerals were rites of passage that marked a radical social transformation. In bear ceremonials, the marriage and even the death of the animal were not definitive situations. Instead, the ritual seems to have emphasised a circular flow of changes and passages that stressed the importance of the continuation of the circle of life after the death of the bruin.

The complexity and dynamism of bear ceremonialism also challenges several classical categories of ritual theory, which makes it a relevant topic for future research in the fields of ritual studies and scholarship on human-animal relations. Ritual emphasis on territorial passages (Van Gennep 1960, 15–25) and weddings (Van Gennep 1960, 116–145) could suggest that bear ceremonialism followed the pattern of a classic "rite of passage." Following the theory of Mary Douglas, it is possible to conclude that the wedding of the bear feast created "a new pattern of reality", a ritual situation in which the anomalousness of the bear was resolved as the bear acquired "a place" in the social and epistemic order of things (Douglas 2002, 48).

However, the new order was transient. The bear never obtained a definitive new status, a fixed "place" or "re-aggregation" (Turner 1992, 9) in the human village. New positions were transitional, often valid only in a specific phase of the ceremonial or in the motif of a song. The bear passed through a whirl of liminal situations and acquisitions of short-lasting and incomplete social identities, and the bruin's mimetic or liminal personhood (Turner 1969, 95) continued to oscillate between humanity and the forest.

As a forest-dweller, the bear had a shifting double identity: It was strictly bound to the family of the forest spirits, but at the same time it had physical and behavioural characteristics suggesting that it could be a human who had transformed into a bruin (Piludu 2019, 66–68). The bear was considered a wild beast interested in eating the cattle, a harasser of women, a personification of the force of the forest, but at the same time it was a person that could be married and invited as a guest of honour into the village to share the "same songs".

This situation made the bear extremely anomalous, both as an animal and as a person. Mary Douglas defined an anomaly as something that does not fit into normal categories (Douglas 2002, 47). According to her, an anomaly is something that has a "halfway" state. The bear was "in-between" humanity and the sacred forest. Douglas connected the notion of anomaly with ambiguity. It is this ambiguity that is difficult to interpret because two or more simultaneous interpretations are available (Douglas 2002, 47). The ambiguity and the anomality of the bear required the complex ritualisation of its hunting.

Bear ceremonialism did not completely resolve all the contradictions of the bruin's animalities or plural identities, but it offered a set of temporary redefinitions (Bordieu 1977; Bell 1992, 110; Stark-Arola 1998a, 33) that were suitable for the goals of the ritual phases and the bear ceremony. The presentation of the bear feast as a wedding and a drinking party transformed a dangerous situation (the killing of a sacred and humanlike animal and the eating of his flesh and organs, which were potentially "poisonous") into a very positive one (the bear is pleased by being the guest of honour, it joins the human community, it is pleased with the songs, ale, and liquors). The success of the bear feast was the necessary prelude for the final rituals of the bear skull, which ensured the regeneration of the bear from the bones and the possible return of the bruin as a prey and as a guest of honour in the village.

Acknowledgements

I'm grateful to the Niilo Helander Foundation (*Niilo Helanderin Säätiö*) for having generously funded my research work at the University of Helsinki. I would like to express my special thanks of gratitude to Susanna Lendiera for the permission to publish her bear photo. I would like to thank Lotte Tarkka, Professor of Folklore Studies at the University of Helsinki, for her valuable assistance for the interpretation and translation of the Viena Karelian *Bear Songs* when she was the supervisor of my PhD thesis. This chapter is dedicated to the memory of Enrico Comba (1956–2020), former Professor of Anthropology of Religions at the University of Turin, for his constant interest in my research work.

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Fig. 1. The bear feast was organised in the village, just after the bear had been killed by the hunters. The hunters continued to sing to the dead bear, considering its soul sentient and able to understand human language. The bear was treated as a guest of honour or as a groom by the mistress of the house where the feast was held. The whole feast was based on the ritual model of a wedding. Photo of Venehjärvi (Viena Karelia, Russia), a village that was famous for its bear hunters, taken by I. K. Inha in 1894 (Museovirasto [Finnish National Board of Antiquities], Finno-Ugric Photographic Collection [Suomalais-ugrilainen kuvakokoelma]: SUK: 22, public domain).



Fig. 2. The entrance of the bear into the house and into the tupa *(main room) was a delicate phase in the feast. The young and unmarried women and girls were invited to leave the yard, protect the cattle and their "wombs" or genitals. The soul of the dead bear was considered extremely dangerous for pregnant women, who did not participate in the feast. An older, married woman (the "mistress of the house") welcomed the bear into the village and the house as a guest of honour or a groom. When the bear entered the house, the children, boys and girls, should leave the outdoor area and the porch as a sign of respect for the bear. Photo of the yard and the outdoors of a house in the village of Pirttijärvi (parish of Vuokkiniemi, Viena Karelia, Russia) with women and children at a local wedding ceremony (photo of the Finnish Army [SA-Kuva 1942-06-21], 21 June 1942, public domain).*

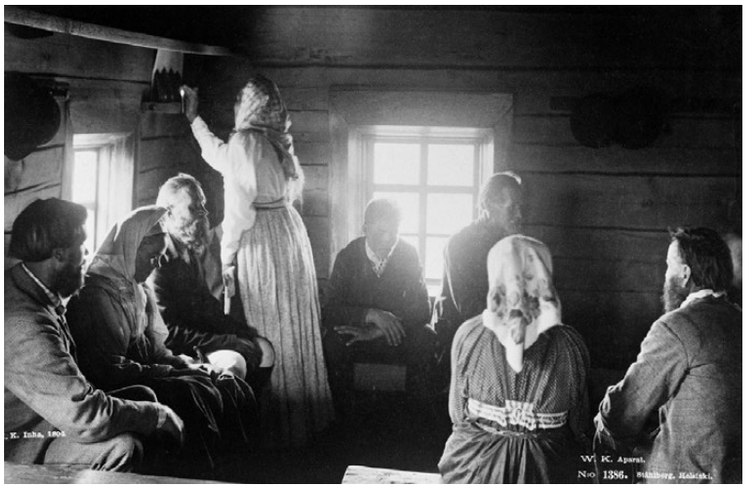


Fig. 3. In Orthodox Karelia, bear fur and the bear head were brought to a place of honour during the bear feast: the rear or holy corner of the tupa *(main room). In this corner, there were the family icons. All the most important family rituals were carried out in this corner – the bear feast, some phases of funerals, and some of the most important parts of the wedding rituals, such as the engagement. Photo of a Karelian wedding ritual phase, the wooing or wedding proposal with a woman lighting up a candle in front of the family icons, taken by I. K. Inha in 1894 (Museovirasto [Finnish National Board of Antiquities], Finno-Ugric Photographic Collection [Suomalais-ugrilainen kuvakokoelma]: SUK: 76, public domain).*



Fig. 4. A prehistoric axe with a bear head from Paltamo (Finland), 9 x 12 cm. The presence of prehistoric axes with bear or elk heads was the basis for several theories about the existence of bear and elk totemic clans in Finland and Karelia. The age of these axes is difficult to establish; they occur in the whole Neolithic period in Finland (6000–1000 BC) (photo M. Haverinen, Museovirasto [Finnish National Board of Antiquities]: KM 13275; Photographic Collection of Archaeology [Arkeologian kuvakokoelma Diakokoelma]: AKD54353:1, public domain).



Fig. 5. A prehistoric axe with an elk head from Säkkijärvi (Russia, former Finnish city or village of Southern Karelia or Viborg Region; photo M. Haverinen, Museovirasto [Finnish National Board of Antiquities]: KM4909:1, Photographic Collection of Archaeology [Arkeologian kuvakokoelma Diakokoelma]: AKD46927:1, public domain).



Fig. 6. "Humanlike bears", photo by Susanna Lendiera, 2018. In Karelia and Finland some women refused to eat the bear meat, considering the bear "too humanlike" or a bewitched human transformed into a bruin. Eating its meat was dangerous or a "sin", like anthropophagy. Some physical features of the bear were considered especially "humanlike". Finnish and Karelian hunters noticed that after the skinning of the fur the anatomy of the corpse of a bear was "like a human body". The capacity of bears to stand on two feet was also considered a proof of their "humanlike" status in the animal realm. The bear was considered a being "in between" the animal realm, the world of the haltias *(forest guardian spirits) and humanity. The difficulties in categorising the bear required several rites to eat its flesh and the strict ritualisation of the whole bear feast.*



Fig. 7. Bear claws were used by hunters and tietäjäs *(seers) in many rites, from protective and healing rituals to the ones that bring sexual or wedding luck. This claw from Pomarkku (Region of Satakunta, Finland), 7 x 2 cm, was used against toothache and in rituals to take revenge against sorcerers and envious people (photo Satakunnan Museo [Museum of Satakunta] SME7852, Museovirasto [Finnish National Board of Antiquities], public domain).*



Fig. 8. Tietäjäs *(seers) and hunters used bear teeth as powerful amulets against bears or the dangerous "force of the forest" (*metsän väki*). This bear tooth from Honkajoki (Region of Satakunta, Finland), 7 x 2 cm, was used to protect horses during travels in the forest (photo Satakunnan Museo [Museum of Satakunta] SME9357, Museovirasto [Finnish National Board of Antiquities], public domain).*

The Finno-Karelian bear skull rituals: Bringing the bruin home to ensure its regeneration

By Vesa Matteo Piludu

Keywords: Finno-Karelian bear skull ritual, sacred pine, return of the bear to its birth land, "sending-off" rituals, regeneration of the bear, treatment of bones, testimony of the bear

*Abstract: In this chapter I analyse the third and last part of the Finno-Karelian bear ceremonialism. In a solemn procession the hunters carried the bear's skull and bones to a sacred pine in the forest. The skull was hung on one of its branches, and the bones were buried under its roots. During the bear skull rituals, the hunters stressed that the skull was not thrown on the ice, it was hung on a good and sacred tree, and it was brought to the mythic place where the bear was born – in the sky, nearby the constellation of the Plough (*Ursa Maior*), or in the sacred forest. The bear was brought back to the world of its guardian spirits (*haltias*) and parents, which were able to ensure the bruin's regeneration from its bones. All the honours shown to the bear skull were fundamental to achieve its regeneration and to obtain good luck in the hunt for the future, as the bruin was supposed to tell the spirits about its treatment. In this chapter, I will also compare the Finno-Karelian, Ob-Ugrian, Siberian and North American traditions about the "sending-off" rituals, the regeneration of game animals from bones, and the bear's testimony about its treatment.*

Bringing the bear skull back to the sky

In the last part of the Finnish and Karelian bear ceremonialism the hunters carried the bear's skull and bones in a solemn procession to a sacred pine (see Fig. 1). These final rites followed the bear hunt and the bear feast, in which all the meat and organs of the bear were eaten.[1] The bear skull ritual is called the "disposal of remains" in Hallowell's model of the phases of the bear ceremonialism (Hallowell 1926, 135–144).[2]

The skull (see Figs. 2–3) was hung on one of the tree's branches, and the bones were buried at its foot (Piludu 2019, 267–271). The hunters reassured the bear's soul, singing that they hung its skull in

1 For an analysis of the songs and rites of the bear hunt, the bear feast, the source materials, and the vernacular conceptions of the forest, see Piludu, this volume, on the songs and rituals of the Finno-Karelian bear hunt, and on the Finno-Karelian bear feast and wedding.

2 For an analysis of the theories of Hallowell, see Piludu, this volume, on the songs and rituals of the Finno-Karelian bear hunt.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 745–760 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134359

a special place of honour. In the village Pesiö, Moilanen, "the old man of Kylämäki",[3] emphasised in his song that the hunters hung the skull at the right height and in the right direction: "We did not put [it] badly, / we put [it] on the thickest of the trees, / on the lower of the branches, / on the broadest of the sprigs, / not too high, / to marvel at the Plough, / to observe the stars" (*Emmä panneet pahasti, / panimma puuta paksummalle, / oksia alovimmalle, / lehviä levehimmalle, / emmäkä kovin yläälle, / otavien ouvostella, / tähtien tähystellä*; SKVR XII2/6573, 1–8, Pesiö, Suomussalmi, Kainuu, Finland, 1917).[4]

The reference to the Plough (*Ursa Maior*) is extremely meaningful, as this constellation was mentioned in several *The Birth of the Bear (Karhun synty)* incantations uttered by cattle herders to protect the cattle from bears during the grazing season (Piludu 2019, 136–144; SKVR XII2/6464). Ukko Timonen of Kiteenlahti sang: "There was *ohto* (the bear) given birth to, / the honey-paw turned around; / high up in the sky, / on the shoulders of the Plough. / How was it brought down? / With a thread it was brought down, / with a silver thong, / in a golden cradle, / then it left roaming the woodlands, / striding the Northland" (*Tuolla ohto synnytelty, / mesikämmen kiännätelty: / ylähällä taivosessa, / Otavaisen olkapäillä. / Missä se alas laskettiin? / Hihnassa alas laskettiin, / hihnassa hopiisessa, / kultaisessa kätkyyssä, / sitte läks saloja samuumaan, / pohjanmoata polokemaan*; SKVR VII5/3932, 3–12, Kiteenlahti, Kitee, North Karelia, Finland, Ukko Timonen, 1894).

The anthropologist Matti Sarmela[5] connects the bear skull rites with the *The Birth of the Bear in the Sky* incantation, stating that the bear skull "was returned to the pine, where according to the myth of the bear origin it was brought down from the sky" (Sarmela 1982, 64; 1991, 220). Many other Finnish scholars interpreted the bear's return to its original birth land as a possible prelude for his regeneration (Kuusi 1963, 49; Haavio 1967, 22–28; Piludu 2019, 287–294).

To support this theory, many Finnish scholars compared the Finnish *Bear Songs* (the songs performed during the bear ceremonials) with the Ob-Ugrian ones.[6] The most precise source about the return of the bear to the sky after the bear ceremonialism is a Khanty[7] *Bear Song*: "I raised myself to heaven again, up to my father God, the seven-throated, / upon an iron chain's end that clinked like silver" (Honko et al. 1993, 153, poem 27). In 1888, Serafim Keropovič Patkanov[8] collected these verses in Shumilovo (Khanty Region, western Siberia). A Khanty hunter or villager interpreted the role of the bear, singing in the first person. In the Khanty tradition, the bear was born in the sky and its father was the god of the sky, Num Torum[9] (Sarmela 1991, 213; Siikala 2008, 142). However, the future resurrection of the bear was not clearly mentioned in the Ob-Ugrian *Bear Songs*. The Khanty song collected by Patkanov refers only to his return to the sky by climbing the iron chain. In the

3 Moilanen was an old *tietäjä* and a hunter. The song was transcribed by Samuli Paulaharju (1875–1944), one of the most active Finnish folklore collectors.

4 SKVR indicates a reference to a song or incantation of the collection *Suomen Kansan Vanhat Runot* (Ancient Songs of the Finnish People). In this chapter the SKVR sources are indicated with the number of the volume (SKVR XII2), followed by the number of the song (/66573) and sometimes the number of the lines (1–2). Additional information can include the parish and village where the song has been collected, the year when the song was collected, the name of the collector and the number of his manuscript, the name of the singer.

5 Matti Sarmela (born in 1937) is an influential Finnish cultural and social anthropologist who wrote intensively on Finnish bear ceremonialism.

6 The Ob-Ugrians (Khanty and Mansi) speak Ob-Ugric languages, a branch of the large Finno-Ugric linguistic family. These languages are spoken in a large geographic area around the Ob and Irtysh rivers in western Siberia. The Ob-Ugrians performed some of the most elaborate bear ceremonials of the Finno-Ugric peoples.

7 The Khanty (in older literature: Ostiak) are an Ob-Ugrian people. Most Khanty live in the Khanty-Mansi Autonomous Region (Okrug) in western Siberia (Russia).

8 Serafim Keropovič Patkanov (1860–1918) was a Russian statistician, economist and ethnographer, who collected songs among the Ob-Ugrians.

9 Num Torum lives in the highest level of the sky and is the most important god of the Ob-Ugrians. He is the father of the hero Mir-Susne-Hum.

Khanty *Bear Songs*, the bruin was raised into the sky (after its death) in the same way it was lowered down to earth (after its birth) – with a chain or string (Harva 1933, 298; Haavio 1967, 36).

In the Mansi[10] tradition, after the bear ritual the bruin ended up back in the sky, where the Father-God asked how it had been treated by the humans, and the bear answered that it was satisfied (Haavio 1967, 36). According to Martti Haavio,[11] the Ob-Ugrian ritual followed a mythic model: The first and "primordial" bear was born in the sky near his father, was brought down to earth, where it was killed; it was then resurrected, and finally it rose to its father in the sky. Each bear, being the descendent of the primordial one, had the same right of the "forefather" bear, and the mythical model was followed or repeated in each Ob-Ugrian bear ceremonial. Haavio argued that a similar model should be present also in the Finnish tradition, but the Finno-Karelians did not sing lines clearly referring to the return of the bruin to the sky (Haavio 1967, 36). It is true that a precise return to the sky is not mentioned in the Finno-Karelian songs, as the bruin is only exhorted to look towards the Plough, not to climb back to the constellation on a rope or a chain.[12]

However, in the Finnish and Karelian traditions the songs and incantation referring to the Plough (*Ursa Major* [on bears and the constellations, cf. Künzl, this volume]), the sun, and the moon, are strongly connected to vernacular concepts of birth, life, awakening, and travel. In Ilomantsi the hunters hung the skull towards the Plough, singing: "I set [it] up to watch the moon, / to learn the stars of the Plough, / to observe the sun" (*Panin kuuta kahtomahan, / otavia oppimahan, / päiveä tähystämähän*; SKVR VII5/3396, 12–14, Ilomantsi, North Karelia, Finland, 1846, name of singer not mentioned in the manuscript by the collector Ahlqvist). The singer Antti Varttiainen[13] sang a variation without the Plough: "I left [it] up to watch the moon, / to admire the sun" (*Heitin kuuta kahtomaan, / päjvää ihaamaan*; SKVR VI2/4913, 128–129, Kiuruvesi, North Savo, Finland, 1819).

Similar lines were present in Viena Karelian childbirth incantations: The moon was invited to release the baby's head "over the stars in the sky / over the shoulders of the Plough" (SKVR I4/972, Lonkka, 1834; Tarkka 2013, 393), and the Plough was invited to guide "the man" (the newborn) from "these alien doors" (the mother's uterus, womb, or vagina; SKVR I4/976b, Uhtua, 1889; Tarkka 2013, 393–394; Piludu 2019, 191–192). The bear soul (contained in the bear head and skull, see Fig. 4) was invited to go back to the world of the living beings: it was supposed to watch and follow the same celestial bodies (the moon, the Plough, the sun) that were believed to help a human newborn baby to find the way out from the mother's womb. In Karelian childbirth incantations the newborn child may also fall from the celestial otherworld: "The sky opened over the stable, / out fell the pure apple (the baby)" (*Taivas rakosi tallin päällä, / putosi puhas omena*; SKVR I4/943:2-3, Kiimäsjärvi, Viena Karelia, Russia, Ontrei Ivanoff, 1889; Tarkka 2013, 393). Bears and human beings were believed to have the same mythic origins: They came from the sky.

The shining of the sun and the moon clearly indicated that the bear "continued its life" in the world of the living, because the traditional Finno-Karelian world of the dead was characterised by darkness or the absence of sunlight and moonlight (Tarkka 2005, 303–304). The motif could be con-

10 The Mansi (in older literature: Vogul) are an Ob-Ugrian people. Most Mansi live in the Khanty-Mansi Autonomous Region (Okrug) in western Siberia (Russia).

11 Martti Haavio (1899–1973) was one of the most influential Finnish professors of the study of folklore and religions. From 1935 to 1967 he wrote several books on Finnish mythology and folk beliefs that were recently re-published. His most relevant text covering Finnish bear ceremonials is *Suomalainen Mytologia* (1967). He also was an important poet, publishing under the pseudonym P. Mustapää, and a member of the innovative Finnish literary group *Tulenkantajat* (The Flame Bearers), which had the novelist Mika Waltari (1908–1979) as its most famous member at the international level.

12 Between the Ob-Ugrian and Finno-Karelian *The Birth of The Bear in the Sky* songs and incantations there were significative differences, see Piludu 2022. On the complexity and differences present in Khanty and Ob-Ugrians bear ceremonials, see Wiget/Balalaeva 2022.

13 Antti Varttiainen (1764–1833) was a skilled *runolaulaja* (singer) and *tietäjä* (seer) from Kiuruvesi. The historian and writer Adolf Ivar Arwidsson transcribed 33 of Varttiainen's Kalevalaic songs and incantations.

nected to the idea of the regeneration of the bear, rarely described in the songs. If the bear was able to watch the stars and the moon, it was "roaming" again in the world of the living.

The call to learn the stars comprising the Plough was also connected with the idea of awakening and travelling somewhere, as the constellation was important for orientation during the night. In Ladoga Karelia, the bride was advised to be very labourious and wake up before dawn "to learn the stars of the Plough" (SKVR XII2/4358, 6, 1890). Before being shot, the bear was also invited to wake up from the den and hibernation to observe the sun and the moon (Piludu 2019, 191). Leaving for the forest, the Viena Karelian hunters asked the forest spirits to teach them to travel observing the stars and the arc of sky (SKVR I4/1107, 6–7; I4/1253, 16–17).

The impression is that the travel of the bear did not end on the tree branch; therefore, the bruin should recognise the constellation to travel somewhere, to awake from his death and to watch the sun and the moon, as a human newborn does after birth.

The sacred pine, Hongotar, and the bear's return to its birth land in the forest

Other *Bear Songs* contain evidence that the bear skull ritual has the goal to bring back the bear to one of its mythical homelands: the woodland of forest spirits, called Metsola (or Mehtola), Tapiola or Pohjola (or Pohja, the Northland),[14] and the pine where it was born. In the Finnish and Karelian traditions, there was a huge quantity of *The Birth of the Bear* incantations, with many variations (Piludu 2019, 101–153): In the incantations sung by the hunters, the bear was generally born in a mythical forest.

During the bear skull ritual, the hunters sang that they did not discard the skull on the road or left it on the ice and in the snow (SKVR VII2/3396, 1–8, Ilomantsi, North Karelia, Finland, 1846). Antti Huttunen from Iisalmi sang that the hunters did not hang the skull on a rowan or a willow, but "rather on an old pine, the good tree" (*Vaan honkahan hyvähän puuhun*; SKVR VI2/4919, Iisalmi, North Savo, Finland, 1876) or on a "pure tree" (SKVR VII2/3034, Ilomantsi, North Karelia, Finland, 1846).

Matti Sarmela mentioned that no information or songs on the ritual of the bear skull were collected in Viena Karelia (Sarmela 1991, 224; 2009, 79). This information is incorrect. There are songs and statements of singers demonstrating that the ritual of the bear skull was performed in Viena Karelia, too (SKVR I4/1245b, I4/1245c; SKVR I4/1253: 16–17, I4/1943).

Sometimes the bear skull tree could be a spruce or a birch (see Fig. 3), but generally it was a pine (see Fig. 2). The anthropologist Francesco Spagna[15] noted that the pine, being a tall evergreen tree, is deeply connected with concepts of immortality or regeneration (Spagna 1998, 185). It remained a beautiful tree even at the end of winter, when the skull rite was performed. The rowan and the willow were not allowed as bear skull trees: They are not evergreen, they can be sad-looking in the wintertime, and they were not suitable as bear skull trees. In some of *The Birth of the Trees* incantations, the willow is described as a bad tree, created from evil, by a pagan (Krohn 1917, 51), or by the devil (Anttonen 1998, 142).

14 Metsola or Mehtola means "forestland" and it is often associated to Mielikki, the forest mistress or the mistress of the forestland (*metsölän emäntä*), the most important female forest spirit; Tapiola means forestland or the "land of Tapio", the master of the forest, the most important male forest spirit. Pohjola or Pohja means "the Northland"; it was associated with the mistress of Pohjola, an ambiguous and dangerous being able to give birth not only to bears and wolves, but also to lethal illnesses. In epic songs, the Northland is a dangerous, "dark", "man-eating" and "hero-drowning" place (Tarkka 2013, 398), and the mistress of Pohjola has magic powers, beautiful daughters and a magic object forged by the smith Ilmarinen – the Sampo. In the songs for the bear ceremonials, she is a strongly associated with Hongotar, a "mother" and protector of bears. All these placenames are associated to spirits that generate or protect bears.

15 Francesco Spagna is an Italian cultural anthropologist of the University of Padua. He has worked intensively on the folk stories about the marriages between bear and humans, and he is an expert of Native American cultures in Canada.

Only certain pines, spruces, or birches were suitable for the bear skull. Kaarle Krohn observed that the chosen tree was generally a large one (see Fig. 1), and it was measured by being hugged (Krohn 2008, 150). Martti Haavio also stressed that the bear skull tree should be huge (Haavio 1967, 31). Sometimes the tree was situated near the house of the hunter who had performed the circling of the bear, but more often the tree was in the deep forest, possibly in a place where people had not come before (Krohn 2008, 150). The latter tradition indicates the necessity of a spatial separation between the skull tree and the human sphere. Sometimes the pine tree was even more isolated from the villages, being on a small island in a lake. Such was the case of Karhunpääsaari (Bear's Head Island) in Kangasniemi, in the Finnish region of South Savo (Haavio 1967, 31).

Karelian and Finnish hunters sang that they hung the bear skull on a middle height: On top of the tree, the cold wind could harm the skull, on a low branch, the black ants would eat or ruin it (SKVR I4/1245c, 5–10, Vuonninen, Viena Karelia, Russia, 1888; SKVR XII2/6572, 1834; XII2/6574). This detail indicates that the skull should be well protected.

In Pielisjärvi the hunters sang that the skull was situated nearby a lake full of fish: "I put [it] on the oldest of the pines, / by its side a shore of whitefish, / beside it, a salmon fishery; / by your side the whitefish swim, / beside you the salmons spawn" (*Panen puuhun vanhimpaan, / sivullaan siikaranta, / luonahan lohiapaja, / sivullasi siiat uipi, / luonasi lohet kutee*; SKVR VII5/3403, 40–44, Pielisjärvi, North Karelia, Finland, 1838, name of singer not mentioned in the manuscript by Elias Lönnrot). This song is very interesting because the hunters seem to deny that the bear had been killed – the bruin's life was described as continuing in a place rich with fish and food.

Furthermore, people believed that the skull and its pine continued to be powerful and dangerous many years after the skull ritual. In Kangasniemi (South Savo, Finland) it was believed that a man who dared to hit a bear skull pine with an axe would go crazy (Haavio 1967, 31). Haavio noted that it was prohibited to touch the skull or take it away from the tree (Haavio 1967, 32). People interested in ruining a bear skull tree could be other hunters, which were jealous or envious of the success of the bear killers.

In Finno-Karelian folklore, the competition between hunters was generally hard. Antti Huttunen of Iisalmi sang curses against those who would dare to remove a skull: "Twist his head, / wind his nose aside!" (*Väännä päätä väärällehen, / nokka syrjähän syseä!*; SKVR VI2/4920, 5–8, Iisalmi, North Savo, Finland, 1876, Antti Huttunen). Another singer from Iisalmi sang a similar curse: "Wrench his hand into a hook" (*Kättä koukkuun kokkoo*; SKVR VI2/7407 a, 29, Iisalmi, North Savo, Finland, 19th century, year and singer unknown, manuscript by Kaarle Krohn). We can suppose that a dreadful spiritual force remained present and vigilant on the spot, protecting the tree and the skull against other hunters who dared to fell or ruin them.

Several songs suggest that this ritual return of the bear skull and soul to the forest and the sacred pine was a prelude of its regeneration. The songs performed at the beginning of the procession of the bear skull ritual included a description of the boundary between the profane village and the sacred forest. The Savonian singer Antti Huttunen exhorted the bear to wander "along that golden alley, / a silver street, / in a golden cup, / in a copper basket, / across the hill of Pohjola" (*Tätä kultaista kujoa, / hopeaista tietä myöten, / kultaisessa kuppisessa, / vaskisessa vakkasessa, / poikki Pohjolan mäkien*; SKVR VI2/4919, 5–9 Iisalmi, North Savo, Finland, 1876). By passing over that hill, being carried in a newborn's basket (*vakka*), the bruin was returned to the mythical land of its birth (Pohjola, or Pohja, the Northland). The reference to the gold and silver alleys and streets indicate that the place is very uncommon and mythical. At the beginning of the bear hunt, the North Karelian hunter Honkanen sang that the bear was born "in the dark Pohjola, / in the rigorous Tapiola" (*Pimeessä Pohjolassa, / tarkassa Tapiolassa*; SKVR VII5/3386: 2–3, Kivilahti, Kauvonniemi, Ilomantsi, North Karelia, Finland, 1885, T. Honkanen). In Nurmes the hunters sang that the bear was born "in the honeyed Mehtola" (*Metisessä Mehtolassa*; SKVR VII5/3385, 9, Nurmes, North Karelia, Finland, 1832, name of

singer not mentioned in the manuscript by Elias Lönnrot). In hunting songs, when Pohjola, Tapiola and Metsola/Mehtola were combined through parallelism, they were names for an otherworldly forest (Franssila 1900, 383; Karhu 1947, 115).

The forestland where the bear was born was not a natural place in the modern sense; it was a mythic environment inhabited by supernatural beings, the *haltias* (guardian spirits) of the forest. In the *The Birth of the Bear* incantations sung by hunters, the bruin is often born under a small pine (or a spruce, another evergreen tree), or on its roots (SKVR VI2/4886, 13; Piludu 2019, 114–120). The hunters sang that the bear was born "under a small pine" (SKVR VI2/4886) or that Mielikki, the Mistress of the forest, conceived the bear "under the spruce's flower-top" (SKVR XII2/6480, 30–36). The hunters gave back the bear's skull and bones, setting them in the exact places where the bruin was born. In different *Bear Songs* the names of the bear's mothers and protectors varied; the most common ones are Mielikki, Hongotar, the Crone or Mistress of Pohjola (Pohja), the Mistress of the forest.

One of the typical female *haltias* protecting the bear was Hongotar, the "Pine Lady" (Piludu 2019, 120–121), and perhaps the hunters gave back the bear's bones to this spirit by hanging the bear skull on a pine tree. The hunters seemed to send the bear's bones back to their birth land, so that they were in place for the regeneration of the animal. Haavio considered Hongotar (also Hongatar, Honkatar, Hongas) to be the original mother of the bear, because her name relates to the pine tree (*honka*) where the bear skull was hung (Haavio 1967, 25). She is mentioned in some of the oldest *Bear Songs* – the *Cantio Ursina* (SKVR IX4/1101, 6, Rautalampi, North Savo, Finland, 1675, anonymous singer) and the *Text of Viitasaari* (after 1750). In the latter, the hunter sang to the bear: "Your family is of the pine grove, / Hongotar is of your family" (*Hongincosta sinun sucusi / Hongotar sinun sugusi*; SKVR IX4/1096, 37–38, Viitasaari, central Finland). In a *The Birth of the Bear* incantation from Kuusamo, the bruin was born "from the den of Petäjätär (the Pine Lady), / the room of Hongatar (the Pine Lady)" (*Petäjättären pesästä, / hongattaren huonehesta*; SKVR XII2/6867, 3–4, Kuusamo, North Ostrobothnia, Finland). This idea could be related to an actual situation: Bears often build their den in digging a hole nearby the roots of a pine or under spruce or pine branches, and she-bears often give birth in their dens. Maybe the songs added a mythical dimension to a natural phenomenon, defining the den as the dwelling place of the forest spirit and that spirit as the mythic mother of the bear.

Martti Haavio considered Hongotar a personification of the pine tree, where the first bear skull was hung (Havio 1967, 25–26). However, this interpretation seems to be a bit too restricted. In the incantations and *Bear Songs*, Hongotar or Hongatar was a typical forest spirit, not only the protector of the pine of the bear skulls. She was also supposed to help the humans who respected her performing rituals and honouring her in the songs. The hunters invoked her to guide them towards the bear den. The hunters prayed to Hongatar to carve signs on the trees to mark the place where the den or the bear could be found (SKVR VII5/3312, 4–10; VII5/3313, 7–12). The cattle herders often invoked Hongatar in incantations to protect the cattle from bears during the grazing season (SKVR VI2/5350, 4–6; VI2/5352, 4–6; VII5/3849, 19–23; VII5, Metsäsuomalaiset 314, 1; XII 2/6740, 37–39).

The regeneration of the bear in Karelian and Siberian traditions

A *Bear Song* by the Karelian singer Iivana Malinen[16] demonstrates the presence of vernacular conceptions about the regeneration of the bear in the Karelian tradition: "The crooked-claw of Pohja, / crooked-claw, bone-hunch, / felt about ten claws, / felt ten claws, / on the north side of the river, /

16 Iivana Malinen was the grandson of Ontrei Malinen, one of the most skilled Karelian singers, and the son of Jyrki Malinen. He learned his *Bear Songs* from his grandfather.

on the sunny side of the hill, / on the root of a wrenched young spruce. / Take from there, my *otso* [bruin], / claws to replace your claws, / the best shirt from the bundle, / the most desired of the teeth" (*Pohjan on kyyttö kynsi, / kyyttö kynsi, luu hamura, / vanu kynttä kymmenisen, vanu kynttä kymmenkunnan, / pohjois-puolella jokea, / päivän-puolella mäkeä, / juuressa nyry-närehen. / Ota sieltä otsoseni, / kynsiä kynsien sijahan, / paita pakasta parahin, haluisimmat hampahista*; SKVR I4/1244 e, 1–11, Vuonninen, Viena Karelia, Russia).

These lines were sung after the skinning of the bear, not during the skull rituals. However, the text is probably the most precise Finno-Karelian description of how a dead bear would be able to regenerate himself. "Crooked-claw" and "bone-hunch" were epithets for the Crone of Pohja or the Mistress of Pohjola (SKVR I1/90, 1; I4/1112, 3–4; I4/1413, 1–2), who felted new claws in Pohjola "on the root of a young spruce". In Iivana Malinen's *The Birth of the Bear* incantation, the Crone of Pohjola was the mother of the bear.[17] She gave birth to the bear "on the root of a wrenched young spruce" (SKVR I4/1191, 12; Piludu 2019, 129–136). Thus, the regeneration of the bear happened at the same spot where the bruin had been born, and it seems that it was put in motion by the mother of the bear. The killed bruin was requested to reach back to its birthplace and take new claws, teeth and the best "shirt," probably a new fur.

The word "rebirth" was never mentioned in the song of Iivana Malinen, who, like all the Finno-Karelian hunters, sang about the death of the bear as little as possible. The procedure in which the bear was involved seemed rather a regeneration, an "exchange" of body parts or the healing of them, than a resurrection. In Iivana's song, the killed bruin is described as a living being able to travel back to the land of its birth. Malinen apparently sang about partial regenerations: new claws for old claws, new teeth for old teeth. However, the claws and the teeth of the bear in the Finno-Karelian tradition represented the force of the whole animal; they were often preserved by hunters and used as protective amulets in many rituals (Piludu 2019, 260–262). By taking new claws and teeth from Pohjola, the force of the bear was fully restored. They were "hard" body parts and the "weapons" of the bear; like swords or knives, they could be "changed". In hunting rituals, the regeneration of animals was believed to start from hard body parts, like claws, teeth, bones, or skulls, not from meat or other organs that decomposed.

The folklorist Matti Kuusi considered the bear skull ritual as directly connected to the idea of regeneration from the bones: "The bones were given back to the forest mistress or a divine being living near the copper mountain or the sky mountain, who was able to make with them the building material of the new bears" (Kuusi 1963, 49). Kuusi made a hypothetical reconstruction, but his theory seems to be based on Iivana Malinen's songs.

The ethnologist Ivar Paulson[18] stated that northern Eurasian peoples ritually preserved the bones of bears, reindeer, elk, deer, foxes, hares, sables, wolves, lynxes, wolverines, walruses, seals, swordfish, and various species of birds and fish. Paulson added that scholars collected more ethnographic data about the preservation of bear bones, "but the rituals performed with them are not fundamen-

17 The anthropologist Matti Sarmela stated that the myth of the bear's birth from the Mistress of Pohjola was a depravation of the ancient *The Birth of the Bear in the Sky*. Sarmela describes the Mistress of Pohjola as the incarnation of evil, as she is also defined as a "whore" and the mother of illnesses in healing incantations. In his theory, this *Birth of the Bear* was the product of an agrarian society that fully demonised the bear, as it could kill the cattle in the grazing season. I am not fully convinced by his interpretation. It is correct that the Mistress of Pohjola was a dangerous being, and she was dreadful in Iivana Malinen's *The Birth of the Bear*, too. However, she was not fully evil, but very ambiguous, able to damage or save people and animals. The herders could invoke her to protect the cattle, and she was able to regenerate bears. Her role in the folk beliefs was not only destructive, but also generative and protective.

18 Ivar Paulson (1922–1966) was an Estonian ethnologist and scholar of Siberian and Finnic religions. He worked in Hamburg and Stockholm and published intensively in German. He was particularly interested in the problem of rituals about regeneration of game animals from their bones.

tally different from those where other animal bones were involved" (Paulson 1968, 451). Among the Mistassini Cree (Canada) hunters, the inedible parts of game animals have "intrinsic power" (Tanner 1979, 141).

The main difference is that among the Finno-Karelians, the Sámi (Fennoscandia), the Mansi (Western Siberia), the Khanty (Western Siberia), the Nivkhi (Eastern Siberia and Sakhalin Island), the Ainu (Japan) or the Cree (Canada), the skull ritual was an integral part of the bear ceremonials and feast. In the circumboreal area, however, the hunting of big sea mammals (whales, walruses, and seals), elk or great quantities of salmon included feasts and ceremonials, too (Lantis 1938; Fienup-Riordan 1994, 88–142; Watanabe 1994). Watanabe identifies ceremonials as "sending-off" rituals, performed before the animal spirits entered the village as guests of honour of the festival and then afterwards, when they were sent back to their environments, to ensure that they would reappear the next hunting or fishing season (Watanabe 1994, 67; Wiget/Balalaeva 2011, 139–140).

Paulson stressed that the general concept of the revival of the bones can be found in many Eurasian traditions, but the hunters themselves "think rather of the animal's continued existence than a resurrection in the proper sense of the word" (Paulson 1968, 455). I will dare to suppose that the scholarly obsession with discussing the resurrection of the animals could also be influenced by the Christian background of several scholars. Resurrection is a concept influenced by centuries of Christian theology, and it implies that the animal experienced a socially recognised death. The problem here is that the bear's death was almost negated during the rituals, and it was transformed into the visit of a guest of honour to the village.

Scholars have made clear statements about the resurrection of animals from bones, but the hunters tried to avoid speaking about the issue. The ethnologist Eveline Lot-Falck[19] stated that the Siberian hunters did not offer clear explanations about the destiny of the animal: "What happened to the animals killed during the hunt? The animal came, it left, so it will come back. Where does it go? How will it come back? No clarification about that. Certainly, in our times, if the word death is pronounced, it is to continue the fictional tale of the voluntary visit" (Lot-Falck 1961, 211). Lot-Falck stressed that Siberian hunters had a different conception of death, compared to the modern one: "Death is not a break. It does not have an irrevocable nature, and it remains a transitory state. A passage between one world to another often leaves the possibility of a return, so the absence of the soul could be temporary" (Lot-Falk 1961, 211). This statement fits well with the Finno-Karelian folk beliefs, in which the death of the bear did not signify the complete absence of life and the dissolution of the bruin's self, but involved the bruin's immediate and voluntary participation in the bear feast (Piludu 2019, 216–224) and the regeneration and continuation of the bear's life after the skull ritual.

Both the Finno-Karelians and Siberians did not appreciate anyone speaking or singing about the kill or the resurrection of the game animals. Siberian hunters had similar beliefs about the necessity of avoiding mention of the bear's death or rebirth. The Ainu (Japan) did not say to the bear that it had been killed, but that it was being "sent away" to its relatives in the mountains (Zolotarev 1937, 123; Batchelor 1901, 206–207).

The Tungusic Orochs (self-designation: Nani; eastern Siberia and Sakhalin Island) people said to the killed bear: "Go fast, go to your masters, put on a new fur, and come back the next year so that I may look at you" (Shternberg 1933, 439; Zolotarev 1937, 123). Lot-Falck stated that the Siberians believed that life continued to inhabit the bones, in different parts of the skeleton, which, at a certain point, could cover itself again with flesh. Life remained and was always potentially present in ritually

19 Eveline Lot-Falck (1918–1974) was a French ethnologist, professor of religions of North Asia and an expert at the Asian Department of the Musée del'Homme of Paris.

preserved bones. As every part potentially represented the whole, a single but powerful bone – such as the skull – was able to generate an entire new body (Lot-Falk 1961, 212).

In the Finno-Karelian and Oroch traditions, the hunters refrained from speaking about the bear's death and resurrection; they instead presented the bear's destiny as a travel back to its birth land for the acquisition of new body parts (fur, teeth, claws). They emphasised the positivity of this bodily regeneration, glossing over the violent death.[20]

The bear's testimony about its treatment

Can we find in Finland or Karelia some accounts of the continuation of the bear's life after its death? In Suomussalmi (Kainuu, Finland) the travel of the bear did not end in the branches of the pine. After the skull ritual, the hunter exhorted the bear to go to Mehtola (Metsola, the Forestland), the land of the forest *haltias* (guardian spirits), to tell that it had been kindly treated during the feast and the skull ritual: "Tell, after having left from here, / after having gone to Mehtola[:] / ["]Here I was not treated badly, / they fed me with mead, / they let me drink honey-drinks.["] (*Sano täältä saatuasi, / mehtolahan mentyäsi: / ei täällä pahoin pietty, / simoa täällä syötettihin, / mesijuomat juotettihin*; SKVR XII2/6572, 11–15, Kylmäsalmi, Suomussalmi, Kainuu, Finland, 1834, name of singer not mentioned in the manuscript by Elias Lönnrot).

According to Kaarle Krohn, the bear that came back to the mythical forestland (Metsola, Mehtola) would persuade other bears to participate in similar feasts in the village (Krohn 2008, 157). The bear probably told them and the forest spirits about the nice treatment in the human village during the bear feast[21] (Piludu 2019, 231–239) and the bear skull rituals. The song is interesting because it reveals that the bear was believed to be able to speak, and the speaking ability is a typical attribute of personhood.

In Finland and Karelia, the alcoholic drinks offered to the bear during the bear feast and the ritual of the bear skull acquired special importance: The bear was seen as being treated well because the hunters offered mead, ale and barley spirits (*paloviina*, a kind of Finnish *vodka* made of barley, *brännvin* in Swedish). At the end of the bear ceremonial, the hunters drank ale from the nostrils of the bear skull. In the 20th century, some informants still remembered that in the past people drank from the skull. In 1912, the informant Mikko Laitinen told that: "When a bear was killed, it was brought to the roots of a sacred tree, where the funerals were held. For this reason, ale was made, and it was drunk from the holes of the nostrils of the skull of the bear" (SKS KRA Oskari Nousiainen 85, 1912, Kangasniemi, Ohensalo, South Savo, Finland, Mikko Laitinen).[22]

The ritual of drinking from the skull is mentioned in old sources on Finnish bear ceremonialism, the *Text of Viitasari* (SKVR IX4/1096, after 1750; Pentikäinen 2007, 74; Piludu 2019, 267–271) and *Historisk och œconomisk beskrifning öfver Calajoki sock uti Österbotn* (1754) by Christian Salmenius[23] (Haavio 1967, 16). The oldest description of the ritual of drinking from the bear skull was in-

20 In Karelia, also human death was not a complete break from life. In the graveyards, the wooden grave markers were carved in a form resembling a house, and on the Day of the Dead, the people offered food and drinks to the souls of the deceased. This tradition is still alive in rural orthodox Karelia and Russia.

21 During the bear feast, the hunters offered the bear ale and barley spirits; see Piludu, this volume, on the Finno-Karelian bear feast and wedding.

22 The sources from the SKS KRA (Archive of Folk Poetry of the Finnish Literature Society) are mentioned indicating: the name of the collector; the number of his manuscript and its year; the village and its parish; the name of the informant and, sometimes, some basic information about him (age and profession).

23 Christian Salmenius (1700–1791) was a Protestant pastor of Lapua. He was interested in local history and wrote about the topic.

cluded in the sermon given by Bishop of Finland Isak Rothovius[24] for the inauguration of Academia Åboensis (Åbo or Turku[25], Finland, July 15, 1640): "When they catch a bear, a party is held in the dark, and they drink a toast for the bear out of its skull, and groan just as the bear does. Thus, would they gain a greater good fortune!" (Pentikäinen 2007, 131; 2014, 429; Siikala 2016, 380).

In the skull rite, the ale acted as an instrument to have a direct, physical connection with the bear skull and bear force. The ale was offered to the bear, but at the same time the hunter also drank it; it was a shared drinking. By offering ale to the bear skull, its soul was pleased, and it happily transmigrated to the sky or its protecting spirits, waiting for its regeneration (Apo 2001, 74). The ale passed through the skull, a powerful container of bear force, and ended up in the mouth, stomach, and veins of the hunter.

The story of the bear's testimony about its treatment is present also in other Northern indigenous cultures. Ivar Paulson stated that among the Sámi, Khanty, Nivkh, and Ainu, after the hunters had ritually treated the bear's bones, the bruin was requested to tell other bears about the good treatment and the honours it had received among the humans (Paulson 1965, 12). Sometimes the bear was supposed to tell other bears to let themselves be caught by the hunters that had treated it so nicely. Lot-Falck stated that Siberian hunters believed that the soul of the killed bear told the other bruins all the ritual procedures used in dealing with its flesh and bones. The animal person, like the human person, was not a unit that could be separated from the group. Thus, an offense to one bear reached the community of the whole animal species, which would then avenge its mistreated member (Lot-Falk 1961, 205).

The Nivkh of Sakhalin Island and the Amur River (eastern Siberia) exhorted the bear's soul to go to the Master of the Forest or the Master of the Mountain (Paulson 1968, 453). The Eastern Cree (Canada) told the bear to go to the Bear Master (*Memekwesiw*) and tell him how nicely the hunters had treated it (Rockwell 1991, 36). Among the Tungusic Olcha (or Ulch, eastern Siberia), the bear was sent back to its relatives, the forest men, or the masters of the mounds, and there it related the details of the ceremonial. If that was arranged properly, the men of the forest would be satisfied, and they would send "happy hunting" to the humans (Zolotarev 1937, 123).

In Finland a correct performance of the bear ceremonialism assured general luck in the hunt. In 1640, as stated above, Isak Rothovius, Bishop of Finland, underscored that the Finns who performed the bear ceremonials believed that a correct ritual gave the hunters good luck in hunting (Haavio 1967, 15; Pentikäinen 2007, 131; 2014, 429; Siikala 2016, 380).

Conclusions: The importance of honouring the bear and its bones

In Finno-Karelian bear ceremonials the destiny of the bear after its death is not precisely described. There were many possibilities surrounding the "posthumous life" of the bear: a) its skull and soul were oriented towards the Plough, following the myth of *The Birth of the Bear* in the Sky; b) the skull was hung on a sacred pine and the bones were buried on its roots, following the myth of *The Birth of the Bear* in a mythical forest; c) the bear was exhorted to go back to one of his mythical birthlands (Pohjola, the Northland) to take new claws and teeth made by its mother, the Crone of Pohjola, d) the bear was requested to go to the mythical forestland (Metsola, Mehtola, Pohjola, Tapiola) to speak about the good treatment and the drinks the humans had offered during the whole ceremonial.

24 Isak Rothovius (1572–1652) was Bishop of Finland and Åbo (Turku) in 1627–1652, a Chancellor of the Academia Åboensis. He was very active for the improvement of teaching in Finland, a land that he considered "barbarian".

25 The old capital of Finland has two names: Åbo in Swedish and Turku in Finnish.

What is certain is that in most of the cases the bear should go back to one of his mythic homelands, or to the exact spot where it was supposed to be born, and that its life "regenerated" or "continued" there. What was relevant for the hunters was not the precise definition of all the phases of its regeneration, but the fact that the bruin and forest spirits understood and remembered how respectfully the "guest" (bear) had been treated during the whole ceremonial, along with its bones in the last phase of the ritual.

The hunters sang the minimum necessary about the death of the bear, giving a brief deluding justification after its kill (Piludu 2019, 200–203), but they sang several lines reminding of all the honours reserved to it. The goal was to avoid the revenge of the bear and forest spirits and to please them, ensuring their favour. The bear ceremonialism reveals a circular vision of animal life: The bear died, but its life continued, thanks to the accuracy of all the rituals.

The most relevant aspect of the whole bear ceremonial was how the bear was treated in all the ritual phases. In the bear feast it was relevant how the bear – presented as a guest of honour and a groom – was invited inside the house of the village. The hunters emphasised that the bruin had a place of honour at the table, and they stressed the abundance of alcoholic drinks offered during the feast (Piludu 2019, 231–239).[26] During the bear skull rituals, the hunters pointed out that the skull was not thrown on the ice, it was hung on a good and sacred tree, it was brought to the place where the bear was born, and it was oriented facing the Plough. The honours reserved to the bear skull were fundamental to achieve the regeneration of the animal and to obtain good luck in the hunt for the future, as the bruin was supposed to tell the forest spirits about its treatment. The proper treatment of the bear throughout the whole ceremonial was the prelude to the return of the satisfied guest and groom in the village and subsequently it ensured a successful bear hunt in the future, followed by yet another joyful feast to please the bruin and the forest spirits.

Acknowledgements

I'm grateful to the Niilo Helander Foundation (*Niilo Helanderin Säätiö*) for having generously funded my research work at the University of Helsinki. I would like to express my special thanks of gratitude to Susanna Lendiera for the permission to publish her bear photo. I would like to thank Lotte Tarkka, Professor of Folklore Studies at the University of Helsinki, for her valuable assistance for the interpretation and translation of the Viena Karelian *Bear Songs* when she was the supervisor of my PhD thesis. This chapter is dedicated to the memory of Enrico Comba (1956–2020), former Professor of Anthropology of Religions at the University of Turin, for his constant interest in my research work.

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26 See Piludu, this volume, on the Finno-Karelian bear feast and wedding.

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Fig. 1. The pine of Timinkylä (Hämeenkyrö, Finland) is a particular karhunkallohonka *– a bear skull pine tree. It is a 400-year-old pine and probably the oldest tree of the region of Pirkanmaa. The hunters hung bear skulls on its branches with coloured stripes. The same tree was also a* uhripuu *(tree for offerings): The local people offered their fields'* primitiae *(first grain or milk of the year) on its roots. Until* c. *1930 people also offered money putting coins in the holes and cracks of the pine. According to Finnish folk beliefs, the* haltia *(guardian spirit) of the tree assured good luck for the cattle and other rural activities if the people performed these offerings. But if the people forgot to perform rituals, the* haltia *took a hard revenge and people could get sick. In the 19th century almost every household in eastern Finland has his own* uhripuu*: The healthier the tree was, the richer and more prosperous was the household. Finally, this pine was also a* parantava puu *(healing tree), as its powerful* haltia *was believed to heal the toothache. Nowadays the tree is protected, it is a local natural attraction, and it has even a personal post box: Visitors can leave written messages describing the feelings they had in front of the huge tree (photo V. M. Piludu, 2019).*



Fig. 2. Bear skull and hunters near a bear trap in Viena Karelia (Russia). Photo taken by I. K. Inha, 1894 (photo Museovirasto [Finnish National Board of Antiquities], Kuopion kulttuurihistoriallinen museo [Museum of Cultural History of Kuopio]: KHMKUVV 243:44, public domain).



Fig. 3. A bear skull on a birch tree in Inari (Lapland, Sámi village, Finland). Generally, the bear skull was hung on a pine tree or a spruce in Finland (photo S. Paulaharju, 1914, Museovirasto [Finnish National Board of Antiquities], Kansatieteen kuvakokoelma [Ethnologic Photographic Archive]: KK3490:1797, public domain).



Fig. 4. "Bear", photo by Susanna Lendiera, 2018. Many rituals of the Finno-Karelian bear ceremonies focused on the head and skull, which was considered the most powerful part of the bruin. The head and the skull contained the soul of the bear. During the bear feast, all the meat and the organs (eyes, ears, tongue) of the head were ritually eaten by the hunters. Doing so, they believed to obtain the supernatural senses and skills of the bear, as the ability of singing a "kindred song", a song in a shared language, which was understood by bears, humans and haltias *(guardian spirits). The preservation of the skull on the branches of the sacred pine ensured the regeneration of the bear from its skull and bones and the possible return of the bruin as a prey. Rituals for the regeneration of the animal avoided the revenge of bears and pleased the* haltias.

The human-bear relationship among swidden cultivators and forest peasants in Savonia, Finland, and central Scandinavia

By Marja-Liisa Keinänen

Keywords: Human-bear relationship, bear ceremonies, bear in magic, swidden cultivation, animal husbandry, Finland, central Scandinavia

Abstract: Building on the social anthropologist Matti Sarmela's valuable tradition-ecological work, this paper examines the relationship between swidden cultivators and forest peasants and the bear. Geographically, it centres on southern and northern Savonia as well as on the old Savonian settlements of northern Tavastia in Finland and central Scandinavia, notably in northwest Värmland and the bordering side in Norway. The folkloristic source material largely covers the 19th century. The paper investigates what kind of "bearhood" the bear songs and charms produced and what these data tell us about the relationship between bear and man. With increasing animal husbandry, the bear came to be seen as a threat to the cattle that were pastured in woodlands and forest villages. Also, the human-bear relationship changed profoundly. Even though the bear was still honoured and treated with respect, it increasingly came to be seen as a beast of prey with a less honourable origin than was the case among earlier hunters. In spite of these changes in attitude, the songs and charms establish an intersubjective and relational stance between bears and humans. Through this communication, the bear was established as a person, who was perceived as an intentional, sentient being with the agency and capacity to make choices, with whom the cattle-minder could reason.

Introduction

Bear ceremonialism has been an integral part of many circumpolar hunting cultures, in which the bear was perceived as a sacred animal to be treated with respect. The bear, seen in Ob-Ugrian traditions as a son of a heavenly god, was ritually slain and honoured through ceremonials. After the celebration, the bear's soul was sent back to its heavenly place of origin. These practices were to guarantee future hunting luck and the continuity of the bear stock (Honko 1993, 120–125). The rich traditions of Finnish-Karelian bear songs, charms, and ritual practices have their roots in an earlier hunting context, but have undergone fundamental changes over time, when adapted to the ecological and cultural conditions of swidden cultivation and animal husbandry (see Piludu, this volume).

According to social anthropologist Matti Sarmela's tradition-ecological analysis, the swidden cultivator's worldview and attitude towards the bear differed quite radically from that of the northern hunters and was in some respects quite the opposite of it. For an eastern Finnish swidden cultivator, the bear was an ecological competitor, a beast of prey who posed a threat to the crops and the livestock that grazed in forestlands (Sarmela 2009, 39). The next stage in Sarmela's evolutionary sketch

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 761–776 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134360

was in the agricultural communities of western Finland, where the bear was considered not only as a beast of prey but as an enemy to be "eradicated from the natural environment controlled by man" (Sarmela 2009, 98). In this predominantly Christian context, the bear was defined as a morally evil animal, who was deprived of its moral right to live in the humans' surroundings and was symbolically moved outside the boundaries of Creation. In Sarmela's model, Christianity legitimises the subjugation of nature by humans (Sarmela 2009, 98).

The aim of this paper is to examine the relationship between swidden cultivators and forest peasants and the bear, with Sarmela's tradition-ecological, evolutionary model as my point of departure. His model greatly enhances our overall understanding of the long-term development, but his macro-perspective also blurs the complexity of the synchronic processes. Cultural elements with their roots in earlier phases of development were adapted to the new cultural context of swidden cultivation. Drawing methodologically on the findings of recent scholarship on animism and indigenous religions, this chapter will explore the human-bear relationship in south and north Savonia, as well as in the old Savonian settlements of northern Tavastia in Finland and central Scandinavia, primarily northwestern Värmland in Sweden, and the bordering area in Norway (see Figs. 1–2).

The subsistence economy in these areas was based on a combination of swidden cultivation, animal husbandry, hunting and fishing. Swidden cultivation was practised in Savonia throughout the 19th century, but the transition to agriculture and stationary village structure was well under way (Fig. 1; cf. Wirilander 1960, 604–613). In northern Värmland, swidden cultivation had, much earlier, given way to stationary small-scale forest agriculture and animal husbandry (Fig. 2). This implies that the mobile swidden cultivators gradually turned into sedentary forest peasants (Bladh 1995, 154–159). As far as I can see, these groups form a transitionary group in Sarmela's model, being betwixt and between the shift from mobile swidden cultivation to more stationary village agriculture.

Many of the prior folklore studies on bear traditions have focused on eastern Savo-Karelian, especially White Sea Karelian, source materials, due to their richness and more archaic nature. I have instead chosen to scrutinise the aforementioned Lutheran areas, since they have been explored to a lesser extent but are interesting for a study of the dynamics of worldview, religion and changing substance economy. Christian impact grew stronger much earlier in these parts than in the easternmost Lutheran and the Orthodox areas. The Lutheran clergy in this area keenly sought to eradicate what they saw as "superstition", comprising both indigenous ideas and practices as well as the residual Catholic elements. In his renowned speech from 1640 in Turku, Bishop Isak Rothovius strictly condemned what he labelled as superstition, among them the bear ceremonies, and legal authorities prosecuted their organisers throughout the 17th century. Despite their efforts, pre-Christian bear ceremonies remained the only instance where Finnish mythical poetry retained its ritual connection (Siikala 2008, 140). Thus, the religion of this group of swidden cultivators was a syncretic *bricolage* of indigenous elements and vernacularised Roman Catholic ideas and practices, for instance a cult of various saints, influenced after the Reformation by Lutheran teachings and practices.

The principal source materials for this study are the bear songs and charms published in the collection *Suomen Kansan Vanhat Runot* (Old Poems of the Finnish People), henceforth abbreviated SKVR. Geographically, the data cover the areas mentioned above. The materials of SKVR are sorted under two principal headings – hunting and animal husbandry. Except for a couple of earlier texts and the so-called Viitasaari text – a lengthy description of the ceremonies – which is dated to the second half of the 18th century, the SKVR materials largely cover the 19th century and the early 20th century. This study also relies on A. V. Rantasalo's collection of charms used in livestock-keeping (Rantasalo 1933; 1934). Both publications are based on ethnographical data from the folklore archives of The Finnish Literature Society. These data were collected mainly between the 19th and early 20th centuries.

I have also relied on Matti Mörtberg's published collection (Mörtberg 2011), gathered in Värmland in the 1930s. Finally, some court records from late 17th-century Sweden shed light on the human-bear relationship in these woodland areas.

This chapter will analyse hunting and ritual songs as well as charms and magic acts concerning the bear, probing their meanings and uses in the context of animal husbandry. I will investigate what kind of "bearhood" the communicative, syncretic bear traditions produced and what they tell us about the relationship between bear and man. If the bear was seen as an enemy by forest peasants, what did this enmity imply in concrete terms and how did the presumably antagonistic relationship find its expression?

Predators and animal husbandry

The contribution of animal husbandry to the livelihood of swidden cultivators and forest peasants in Savonia was quite modest during the 18th century, and cattle were primarily kept for manure production. Due to poor access to fodder, cows produced milk primarily during the short outdoor season, being dry most of the winter and, at the beginning of the outdoor season, their physical condition was extremely poor. With profound improvements to pastures during the 19th century, there was a vast increase in milk production, with butter becoming an important commodity to be sold in Viborg and St. Petersburg (Wirilander 1960, 693, 695). In Forest Finnish areas, animal husbandry reached substantial significance much earlier due to access to good pastures (Bladh 1995, 153–154; Wedin 2007, 150–154).

Along with the increasing importance of livestock for the forest peasants' livelihood, the fear of predators, who were a veritable threat to the cattle's survival, intensified. Throughout the 18th century, wolves and bears caused substantial damage to the livestock in different localities in Savonia at regular intervals. Also the 1820s, 1830s and 1860s were harsh years as far as predators were concerned (Soininen 1974, 218–219; see also Wirilander 1960, 697–700). The situation was as problematic in Sweden. Since the mid-17th century, the predator problem was largely dealt with by state-ordained chases and organised collective hunts (Tillhagen 1987, 125). The livestock-keepers also sought to secure their stock's safety by magic means.

The gradual shift in the subsistence economy was also paralleled with changes in the forest crofters' worldview and their relationship to nature. In the SKVR's collection of bear songs and incantations, which originally belonged to a hunting context, the bear was addressed more often in the context of animal husbandry than hunting. Interestingly, the wolf, who posed as great a threat to the livestock as the bear, is relatively invisible in this vast collection of charms. A great majority of the rites used for safeguarding the cattle against predators aimed at warding off the bear. The theme "against a bear" (*karhua vastaan*) can be found in a total of 538 magic incantations concerning animal husbandry over the entire Finnish-Karelian area, but only 178 charms concerned the wolf. We find a similar pattern in Rantasalo's collection of Finnish and Karelian magic acts (*taika*) that were employed in livestock-keeping: Of the 53 protective rites, which were performed at the beginning of the outdoor season to protect the cattle against predators, 34 specifically mention the bear; only ten acts were aimed at the wolf (Rantasalo 1933, I:VI, 4).

The bear's predominance in charm materials is not so much due to it being considered more dangerous than the wolf, but rather to it keeping its salient position in the vernacular religion of Finns and Karelians. Mythology concerning the wolf seems to be scant, and the hunting of it was only modestly ritualised. A search of the entire SKVR results in only four charms for wolf hunting compared to 174 for bear hunting. Neither do we find any data there on *peijaiset*, a hunting "feast", arranged for a wolf. This suggests that the human-bear relationship differed fundamentally from the

relationship between human and wolf – the latter was not ascribed the similar degree of personhood as was the bear, and the human-wolf relationship remained distant.

"Bearhood" – the bear as a person and a relative

Probing deeper into the question of how the humans' view of the bear changed among the aforementioned groups of swidden cultivators and forest peasants, I will build on the critical findings of the recent studies of indigenous religions, which have challenged the premises of the earlier studies on so called animism. Proceeding largely from A. Irving Hallowell's research (Hallowell 1926), these studies have particularly questioned the underlaying anthropocentrism, ontologies, and epistemologies of the previous scholarship and have further elaborated the notion of person and personhood in indigenous religions.

They argue, among other things, that ontologies and epistemologies of indigenous religions are characterised by relationality. According to this view, the universe is populated by various categories of persons, which in the Savo-Karelian case comprised human persons, animal persons, and various kinds of spirit persons. Even the forest was treated in certain contexts as a person. Personhood implies here that various categories of persons, and even certain things, were assumed to possess the "same qualities of sentience, will, rationality, and emotionality that characterize man himself" (Morrison 2000, 28). The universe populated by different person categories was perceived as intersubjective, meaning that these persons communicated with each other in various ways, and through this communication established themselves and each other as persons. Also, causality was understood in personal rather than impersonal terms. Persons shared causal agency and exercised power, i.e. could influence each other in different ways (Morrison 2000, 28).

Although the human-bear relationship radically changed during the long transition from hunting to swidden culture, the intersubjective and relational stance can still be discerned in Savo-Karelian folklore materials. Lotte Tarkka's findings, based on her White Sea Karelian data, also have bearing in Savonia. The forest was imagined in charms and songs as a sociomorphic world modelled on human community. The woodlands were populated by various kinds of spirits ruled by Tapio, the master of the forest, who reigned over the forest animals. He was pictured in songs and incantations as living in a cottage with his family. Concerning bear traditions, too, the forest was imagined as the bear's home, where it lived in a house and slept in a bed. Tapio, and some female forest spirits, also had the power to offer the animals to the hunter or deny them to him. In some contexts, Tapio even personified the forest, as did the bear (Tarkka 1994, 257–259; Siikala 2008, 136–137).

According to R. E. Nirvi's analysis of word taboos (Nirvi 1944), the noun *forest* was used as a synonym for a bear, and the phrase "the forest moves" (*metsä liikkuu*) not only indicated that the bear was on the move, but was a euphemism for the beast also having caused damage. A malicious person was assumed to be able to set the forest/bear into motion: "Rise forest against the cow, / from alder thicket the cow-eater, / the angry cat from a grove" (SKVR IX4: 1359). Circumlocutions such as "the forest visited the cattle" and "the forest cuts (*leikkaa*)" were expressions for the bear or a predator having injured the cattle (Nirvi 1944, 27–28; SMSK s.v. *metsä* 3). A spell, "May the forest eat your cattle!", was said in order to set a bear on someone else's cattle; the forest denoting here a bear (SKVR IX4: 1360). A moving forest had to be "locked" or "shackled" by a wise person (SMSK s.v. *metsä* 3:1bb). The agency ascribed to the forest also comes forth in the idea of the forest as a cover; the forest could actively hide a cow or a human person (Tarkka 1994, 82–84).

A hunter-livestock keeper communicated with the animate forest, its supernatural owners, and the animals by means of songs and incantations. In this communication, the bear was addressed as if it were a sensing and conscious person with the desire and ability to communicate and act with intent.

Nirvi maintains that the bear was assumed to hear and understand speech, as well as to respond to it (Nirvi 1944, 74). Due to the generative, performative nature of indigenous languages, speech was assumed to impact the material world (cf. Morrison 2000, 34–35; see Hautala 1960, 16, 19). The fear of mentioning certain potentially dangerous matters, such as a bear, the devil, fire, etc., was based on the idea that a mere uttering of these words, or the acts they were associated with, would imply calling upon them. The fear of conjuring up a bear comes forth in a comment by a Savonian informant, who concurred to talk about his encounter with a bear only briefly, fearing that the animal might materialise (SKVR VI2: 5440). A bear was also believed to get annoyed if its proper appellation was not used (Nirvi 1944, 55, 74). For these reasons, we find a great number of circumlocutory designations for the bear.

Since kinship in Savonia was the cornerstone of social organisation, the relationship to various person categories was often imagined in terms of kinship. The hunter-livestock keeper's communication with a bear established the animal not only as a bear-person, i.e. an intentional, sentient being with the agency and capacity to make choices, but also as a relative when engaging in and maintaining a relationship with it (cf. Bird-David 1999, 73; Morrison 2000, 28). A Savonian hunter appealed in his hunting songs to various female spirits of the forest in a highly self-assured and erotic tenor. His relationship to the quarry, sometimes even called "the daughter of the forest", was analogous to that between the suitor and the courted maiden (Tarkka 1994, 257; Siikala 2008, 136–137).

According to Sarmela, in kinship-based swidden societies of Savonia, rituals or marriage were a common means of "creating legal alliance relationships". A farmstead's shortage of manpower was usually solved by an incorporation of outsiders into the kinship group, e.g. as foster children or as members of an extended family, such as in-marrying husbands. Analogically, by means of the bear feast (*kouvon päälliset*), which in central Finland was staged as a wedding, the bear was joined by marital bonds to the family of humans (Sarmela 2009, 43; for the wedding see Piludu, this volume). The Finnish appellation *kouko* (gen. *kouvon*) used of a bear presumably originally denoted "a father", "a grandfather" or "an old man" (Nirvi 1944, 41). It is often assumed that the word was originally used to denote a forefather in a totemic clan context (Honko 1993, 126). However, the word seems to have lost this denotation in 19th-century parlance and was simply used as a circumlocution for the tabooed word "bear". But there were other endearing and honouring appellations for a bear that were generally used when addressing highly respected persons, such as parents, grandparents, and elders as well as chiefs ("King of the Forest"; Nirvi 1944, 79).

The intensified efforts by the authorities to put an end to the bear ceremonies led to their gradual decline from the 18th century onwards. The changes in the subsistence economy also contributed to changes in the human-bear relationship. The celebrations of "weddings" declined, but we still can discern the intersubjective and relational attitude in our oral bear traditions from the 19th century.

The status of the bear

According to Sarmela, the transition from hunting to swidden cultivation and animal husbandry implied that the animal of celestial origin, who was honoured by hunting cultures, was degraded to a creature of evil stock (Sarmela 2009, 95). The bear was symbolically removed from the forest farmer's environment and its world was to be kept apart from that of man. The objective of the bear ceremonies was no longer to ensure that the bear was reincarnated but instead was sent back to its place of origin, which was no longer considered to be the celestial sphere but the ill-reputed Northland (Pohjola, Pohja), governed by its matron, a harlot. In Finnish-Karelian exorcisms, Pohjola was pictured as "the cradle of evil, the place to which diseases were banished", and now also the origin of the bear (Sarmela 2009, 95, 103).

However, Sarmela's generalisation is somewhat problematic given the fact that the attitude to the bear varied contextually. As Tarkka has observed, hunting charms address the bear with endearing and enticing words, whereas the view of the bear in the context of cattle-minding turns into its opposite (Tarkka 1994, 258). Some sources show that attitudes to the bear also varied during one and the same ritual occasion. One Juho Eskelinen (b. 1839) from Sonkajärvi, northern Savonia, who was quite knowledgeable about the bear ceremonies, characterised the tenor of the feast as quite solemn, with participants being on their best behaviour. The singer was assigned an honorary place at the table, treating the bear respectfully, but also scolding and reproaching it in his songs (SKVR VI2: 4926). Thus, the bear songs and rituals were characterised by ambivalence, the tone altering from awe and respect to scolding and reproaching, a phenomenon we also find among the hunting people (Honko 1993, 120).

Moreover, Sarmela's interpretation is complicated by the fact that the incantations are often fragmentary, muddled, and sometimes even contradictory. One and the same charm may combine several themes of the bear's origin without a clear, logical connection. Also, the meaning of Pohjola/Pohja may vary contextually. Sometimes it denotes the direction (north) or, as mentioned, the place where the bear in our case was expelled to. But a comparison of bear songs and incantations in other hunting lore from the same geographical area shows that Pohjola also appears without evil connotations. In some contexts, it simply represents the otherworldly, enchanted forest (Piludu 2019, 115). Also, the valourisation of the various places of origin may vary contextually.

The function of origin themes in incantations was to gain control over a certain phenomenon through a wise person's demonstration of knowledge of its mythical origin. In charms, the themes of origin were used to heal or restore damages, generally called "wraths" (*vihat*, pl.), caused by certain natural phenomena, objects, or animals (Siikala 2002, 86–90). The majority of the bear's origin themes were incorporated in incantations used in livestock-keeping. Thus, by revealing the bear's origin, cattle-minders either sought to send the potential "cow-eater" back to its mythical home, often the otherworldly forest, or just sought to render it harmless.

The bear's celestial origin is mentioned in only five cattle-keeping charms from Savonia. The Tavastian charms of origin (six items) and the Forest Finnish ones (four items) do not refer to the bear's origin in the sky, but instead to its origin on earth. The most common motif among these groups is the bear's birth in the centre (*napa*) of the forest (Karhu 1947, 67, 97, 217). The bear was lulled under "the spruce with flowering top, / under a tiny pine tree, / on the tip of an iron bench" (SKVR VI5: 4822). The change of the place of birth from heavenly heights down to earth does not necessarily imply a degradation of the bear's status. As mentioned, the forest of the charms is not the natural, physical forest, but the mythical Pohjola, which is not only imagined as the abode of the evil, but equally often as an enchanted, otherworldly forestland.

According to J. Karhu's analysis of the origin themes, the longest and most complete charms in Savonia are those that describe the bear being fashioned out of wool (Karhu 1947, 84). Building on Karhu's interpretation, Sarmela sees the wool motif as belittling since these supposedly petty materials of which the bear of the charms was moulded were abandoned by Pirjotar (St Brigit; see Sarmela 2009, 98). However, the reasons for claiming St Brigit's primacy in this function and the negative interpretation of the wool theme (e.g. Karhu 1947, 230; Haavio 2020, 461–463) may be questioned. Wool was also coupled to other saints of the vernacular religion, for instance the Virgin Mary, Kati (St Catherine), and Yrjänä (St George). All of these were connected to livestock and their protection. The idea of fashioning a furry bear out of wool is not far-fetched in a peasant community, and the metaphor of wool is quite practical when seeking to disarm the bear. When rendering a bear harmless, the wise person asked it to hide its claws and fangs in wool, or he/she wished that these sharp weapons would turn into soft wool (for example, SKVR VI2: 4884).

Moreover, in some Savonian incantations, the bear's creation out of wool was located in the primordial sea – the stage of the world's creation in the epic poems. Even though the introductory lines

of a charm recorded in 1819 in Kiuruvesi, northern Savonia, can be read as somewhat derogatory due to the chant's ritual context, warding off the bear, its birth was still described in honourable terms. The creators, who tossed the wool into the sea, where it drifted for "seven summers", are the central couple of Finnish-Karelian syncretic charms: Ukko, the god of thunder, and the Virgin Mary. The wool drifted to a "heathen cape, to a point without a name" – namelessness in charms signifying otherworldliness (Tarkka 2013, 417). The Virgin Mary, accompanied by "Kuihkamo, the king of the forest", gathered the tufts in her hems and carried them to the forest where she shaped them into a bear (SKVR VI2: 5413; see Piludu 2019, 145).

However, there are also charms in my materials that ascribe evil origins to the bear or associate it with evil. A charm from Kivijärvi in central Finland calls the bear a "*hiisi* bear" (*hiien Karhu*), and *mörkö* (bugbear), the latter word being a common circumlocution for a bear. The multifarious term *hiisi* has here a negative, devilish denotation (see Siikala 2008, 148). In this charm, the bear was created as an unruly predator, who did lots of damage but gave a pledge promising to behave himself (SKVR VI2: 1303; see below).

The ambivalent view of the bear's birth comes forth also in a Forest Finnish charm titled *Karhun emu* (The bear's mother). Although the bear was born by the honoured Kati (St Catherine),[1] a couple of lines indicate that the person who bore the bruin out of wedlock was "a bad person". At the end, the enchanter banished the bear to the otherworld "across the nine seas" (SKVR VII5: 315). Thus, there is an implication that the bear was considered an illegitimate child and a bad creature who was to be sent away, just as Sarmela argues.

Moreover, in a Forest Finnish charm for healing wolf bites, Kati also appears as the wolf's mother (SKVR VII5, 206).[2] This is logical since some of the Forest Finnish charms seem to have been used interchangeably against the wolf as well as the bear. Their interchangeability may indicate the decline of the bear's status; the bear now being seen as a beast of prey on par with the wolf.

In Finnish settlements around the Norwegian-Swedish border area, where livestock-keeping gained substantial importance much earlier than in their original homelands in Savonia and northern Tavastia, the bear may have lost its honoured position quicker and have come to be seen as a beast of prey. As Karhu mentions, the golden chains of the cradle by which the heavenly bear was once lowered down onto earth were now used to shackle it in a charm (Karhu 1947, 322; SKVR VII5: 315a).

However, if we look at the motifs of the wolf's birth in the Savonian data (four items), the difference between the valorisation of these two animals becomes more striking. The wolf's dishonourable origin is pictured as quite unequivocal. A spell from 18th-century Savonia mentions Lovetar, "the harlot, mistress of the Northland" as the mother of wolf, who carried "the dog" in her womb (SKVR VI2: 5454, see also VI2: 5455–5457). Lovetar usually appears as the mother of the nine diseases (Haavio 2020, 391), and the noun "dog" in charms often personifies an evil agent, a carrier of malevolent sorcery.

It is quite logical that, in the charms used for the protection of the cattle, the bear was pictured as bad, a potential "cow-eater", who was to be chased away. Still, it does not imply that the bear of the charms was perceived as inherently evil, even though the human-bear relationship had gradually grown more distant. The bear was no longer related to humans by a close family bond, but increasingly through an imagined common Christian ancestry or a membership in a common Christian community. A charm from Nurmes in Finnish Karelia said the bear was "of Eve's and Adam's lineage", whereas some Savo-Karelian bear songs describe a bear's baptismal, whereby it joined the Christian community (Siikala 2008, 144; Piludu 2019, 149–151). In a charm from Kiuruvesi, northern

1 In vernacular Christianity, Kati was the protector of livestock, especially sheep (Järvinen 2016, 434).
2 Other female spirits and saints appear in this role in the incantations, too.

Savonia, the Virgin Mary herself acted as godmother, bringing the bear to be baptised in the River Jordan (SKVR VI2: 5413). Thus, the bear was not excluded from the Christian world, as Sarmela argues was the case in western Finnish agrarian communities, but through baptism came to be seen as part of Creation and the moral community of humans.

Negotiating space: Forest – village

Although the purpose of the cattle charms was to ward off the bear, they still recognised the forest as its legitimate territory – the bear was the forest's cattle according to a charm from Värmland (SKVR VII5: 329) –, whereas the village was designated as the domain of humans and their livestock. However, in everyday life it was not possible to uphold a stable boundary between the forest and the village. It was constantly crossed from both sides: During the outdoor season the cattle were pastured in the forestland, and bears paid unwelcome visits to the village (Tarkka 2013, 356–357).

Since bears, humans, and their livestock partly shared the same territory, the cattle-keepers sought a way to a peaceful co-existence with the bear. The spells clearly established the forest as the rightful domain for a bear to roam, and they negotiated the boundary between the bear's and the cattle's territory. They also defined the suitable undertakings for a bear in each of the spheres (SKVR IX4: 1341):

Pysy kouko kotonasi,	Kouko, stay in your home, /
Karhu ole kankahalla,	Bear, remain in the moorlands,
Älä eti elukoita,	Don't look for the livestock,
Älä kato karjan päälle,	Don't covet the cattle,
Syö siellä muuramia	Eat the cloudberries,
Sekä kaiva karpaloita. […]	and gather cranberries. […]
Kiskahele kiviä,	pull up stones,
Sekä kaiva kantosia.	dig into tree stumps.
Tormaa toukan päälle	Charge at maggots,
Sekä kuovi kusiainen.	And dig up ants./
Ole peto pesässäsi,	Stay, you beast, in your lair,
Sekä kaiva kanarvia,	And dig heathers,
Makoa maan kolossa. […]	lay in a hole in the ground […].
Oo koira kotonasi,	Stay dog at your home,
Elä emäs kanssa, […]	Live with your mother, […]
Pysy Tapion takana,	Stay behind Tapio,
Metän tummun turpahissa.	in the forest granny's turfs.
Ei ole sinun osasi	It is not your business
Olla ihmisten ilmossa,	To stay in the people's world,
Eikä kaivaa karjasia.	Neither to covet the cattle.

The charms could also mark the boundary in other ways. A Forest Finnish charm asked the Virgin Mary to keep "the forest's cattle" apart from the farmstead's cattle and to raise an iron fence – a standard protective device of the charms – around the cattle. The charm also pleaded with the bear itself, addressing it as "the Golden King of the Forest", asking him to leave "the horn-heads" and "milk-givers" in peace "in the armpit of the forest" (SKVR VII5: 329). Another charm courteously asked a she-bear to leave the human domain and move to "Pohja", where there was lots of space for proper bear activities, e.g. digging ant hills, etc. It also specified the consequences should she cross the line to the human domain: The forest would hold her firmly in its grip by letting her sink into

the marsh up to her waist. The variant that addressed a male bear opens respectfully, calling him the "Golden King of the Forest", but then strikes a harsher note. The bear was sent to the far end of Pohjola with wordings common in exorcisms: "There is boneless meat / headless fish, / where a crone is hung / the elks are shackled there", and where there were ant hills and sand for him to dig (SKVR VII2: 5425).

In a charm from the end of the 17th century, the bear was sent back to its home in the centre of the forest (*metsän navolle*). In this mythic landscape there were "golden ant hills, pots of honey" – foodstuff that was the proper diet for a bear, which had also nourished its parents. The tone of the formula is quite conciliatory and closes with the standard wish: "Leave the cattle in peace, live in amity (*sovinto*) with the dung-thighs" (SKVR VII2: 5434).

In some Savo-Karelian incantations, we can find a bear's pledge theme; a theme that reminds us of the myths among the arctic hunters where the heavenly god stipulated the rules for the bear's behaviour, its diet, the terms of its hunting and the rules for the observance of bear ceremonies (Honko 1993, 125). A charm recorded in Kivijärvi, central Finland, in 1884 laid out the terms for a bear's visit and the hunting of it. The incantation opens with a long description of the bear's creation, the forging of it into a fierce animal, a "*hiisi* bear", a *mörkö* (bugbear) in a smithy, who through its rage created great turmoil. But suddenly a giant slapped the raging bear on the ear, and the bear took a pledge (SKVR IX4: 1303):

[…] "Anna olla minun täällä,	[…] "Let me stay here,
Älä minua ahista	Don't harass me. /
Minä asun metsikössä,	I will live in the forest,
Sekä kuusikossa kumajan,	in spruce forest I will rumble, /
En tule enää sinulle	I won't come to you
Pahennusta tekemähän.	To do any harm.
Jos minä tulen likelles,	Should I come close to you,
Pistä mua keihäällä	hit me with your spear.
Sekä ammu pyssylläsi." […]	And shoot me with your gun." […]

The bear also promised not to ravage forestland but said he would be content to dig for ants and eat berries in the forest. It would prepare a lair where it would stay all winter, keeping away from the human quarters. If the bear broke this deal, humans had the right to slay it: "Should I come close to you, / hit me with your spear. / And shoot me with your gun" (SKVR IX4: 1303). This is the only bear's pledge motif in my materials, but we find the theme in the Karelian ones, too (see Piludu 2019, 149–151).

However, some incantations recognise the forest as a shared space where both bears and humans had the right to move, but the territorial boundaries of the bear's movement in the forest were to be negotiated. As mentioned, many charms acknowledge the bear's right to move in the forestland, sometimes even in the village, but they also delineate the terms for its visits. A charm from Kuopio, northern Savonia, established: "[…] You are allowed, / three times a summer, / to wander about the cattle's land, / but don't you do any harm. […]" (SKVR VI2: 5342).

In numerous incantations, the cowbells' ringing range marked the boundary of the bear's legitimate movements in the territory, instructing it how to avoid the cattle. A cowbell served as a signal for the bear either to leave the area or to avoid the rural areas where the cattle were grazing (SKVR VI2, 5433):

Kuin sinä kuulet karjan kellon,	When you hear a cowbell,
Kellon helevän hevosen,	pealing of a horsebell,

Elä tule sille mualle!	Stay away from those lands!
Kuin ne menee mäin alate,	When they [the cattle] walk at the foot of a hill,
Mene sinä mäkiä myöten,	walk the brow of the hill,
Eli kun [!] ne menee mäkiä myöten,	when they walk on the brow of the hill,
Mene sinä mäin alate!	walk at the foot of the hill!

A ninety lines long charm from Kiuruvesi, northern Savonia, recorded in 1819, appealed to the bear (SKVR VI2: 5413):

[…] Kuinsas kuulet karjan kellon,	[…] When you hear the cowbell,
Helkkävän hevosen kellon,	Ringing of a horsebell,
Mänes toisellen mäellen,	Hurry to another hill,
Nouse toisellen norollen,	run to another brook, /
Pane maata mättähälle,	Lay down on turf,
Nurmelle nukahtamaan,	sleep in the grass,
Lyö kaxi kämmentäs	cover your both ears,
Kahen puolen korvilleis,	with your two paws,
Tunge turpasi kuloon,	shove your muzzle in dry hay, /
Paina pääsi pöckelöön. […]	push your head into a decaying tree. […]

Had a bear crossed the boundary between forest and village, i.e. had it been traced or sighted in the vicinity of a farmhouse or pastures, it was sent back to the forest by magic means. The spell involved a physical manipulation of the bear's traces, for instance lifting the lump of soil with the imprint and turning it to face away from the village (see Rantasalo 1933, II, 801–804). There were also persons who were specialised in warding off predators. In some areas in central Sweden, Finns were renowned for their assumed skills of "turning the traces" (*att vända fjäten*), and chasing away the beasts (Tillhagen 1987, 148–149).

Despite the ambivalence and changes in the forest peasants' attitudes towards the bear, it was still recognised as a person to be respected. Even though the aim of the spells was to send the bear away, the tenor of the incantations was often quite conciliatory, particularly if compared to the treatment of the wolf. The bear was perceived as a person with desires that could subject it to temptations, and it was the wise person's duty to contain them by asking the bear to exercise self-restraint and to curb its craving for flesh and blood.

In order to avoid temptation, the bear was frequently asked in charms and songs to cover its ears so it would not hear the cowbell, and to lock its jawbones. It could also be asked to conceal its fangs and claws in its fur ("wool") to render them harmless, or render its teeth and claws soft as wool. But equally often the hunter or the livestock keeper appealed to a spirit, Hongatar, the Lady of the Pine, or various saints to lock the bear's jaw or raise a protective fence around the cattle. Another common motif was a strap of willow, iron, or copper to bind the jaw (e.g. SKVR VI: 5413). Thus, the bear was treated as a person who needed to harness its desires in order not to harm the cattle.

"Raising the bear" – the bear as a weapon

In a hunting-swidden society, farming entities competed for natural resources (Sarmela 2009, 230), and the bear was sometimes employed as a weapon in this competition. A bear's aggressive behaviour was seen as a deviation from its natural behaviour and was suspected as being magically induced. Thus, a bear who behaved violently, killing cattle or pulling up trees and stumps was suspected of

being a so-called *nostokarhu*; that is, a bear that had been "raised", instigated by a human being into a rage (*vimma*, *into*; cf. SKVR VI2: 5446 and 5450; Mörtberg 2011, 93). In the SKVR collection, there are a total of 134 verbal charms from Finland and Karelia that aimed at raising a bear against somebody's cattle. Sixteen of these charms were recorded in Savonia, 22 in northern Tavastia, and two in Värmland. Only a couple of these cases provide us with a more accurate explanation for this hostile act. In Rantasalo's collection, where we find a total of 72 cases of "raising a bear" (besides an occasional wolf), the motive for the act is seldom given. One source mentioned envy as a reason (Rantasalo 1934, 2013). One of the cases in SKVR suggests that a bear was used as an instrument for causing damage or for seeking revenge in disputes concerning cattle (SKVR VI2: 5714).

Savonian court records tell us that cattle gorging themselves on growing crops was a frequent source of conflict between neighbours. The courts, however, seem to have often denied the plaintiffs a recompense for their loss, referring to inadequate fencing (Saloheimo 1990, 220–222). In such cases, the harmed party may have sought to settle the score by magic means. In a couple of records, the owner himself used a bear to punish his own cattle for their having eaten standing crops. The bear did not kill the cows, just "bruised their backs" (SKVR VI2: 6038; cf. also Gottlund 1984, 185).

Some court cases in the Forest Finnish areas in Sweden provide us with contextual information about the bear-raising magic. In a couple of cases, there seems to have been a conflict between neighbours or neighbouring villages over lands or other natural resources. In Bergslagen, in central Sweden, one Matts Larson was accused in 1685 of having summoned a bear to assault a neighbour's cattle. The accusers saw this as an act of aggression as they believed that Larsson tried to obtain economic advantages at their expense.[3]

Also in Torp, Medelpad, in northwest Sweden, a bear was supposedly used as an instrument in a protracted conflict between two Finnish settlements. One Lars Andersson, a widely consulted wise man in the province, was accused at the local court of having summoned a bear against his neighbour's cattle. The bear had slain six cows, an ox and six sheep, thereby causing substantial damage for the victim. Andersson defended himself by blaming one certain Old Majsa who had first put a spell on his livestock, making them dry. In revenge, he "fixed" it so that she lost all of her cattle (Gothe 1993, 77). We also find similar kinds of conflicts of interest in later data from the northwest of Värmland. According to Karin Henriksson (b. 1855), a local man had allegedly sent a bear against his neighbours because of a disagreement over a meadow (Mörtberg 2011, 97).

The court records do not provide us with any detailed information about the methods that these alleged sorcerers used. The later folklore collections, however, make available relatively rich data in this respect. As mentioned, frenzy was considered a sign of a bear being "raised" by a malicious person. A conjurer, when reading his/her charms, accompanied them with acts that imitated a bear's aggressive behaviour, that is, digging ground with one's claws, pulling down trees, etc. (e.g. SKVR VI2: 5418; Rantasalo 1933, 786 §2; 1934, 2013–2014); in other words, he/she was behaving like the raging bear of the charms. This 18th-century verbal charm, noted down most likely in Savonia, summoned a bear to somebody's livestock (SKVR VI2: 5414):

Nouse karhu kankahasta,	Rise bear from the moorland,
Hiedasta hevoisen syöjä,	From sand the horse eater,
Viiasta vihainen kissa,	From a thicket the fierce cat,
Korvesta kovero-koura,	From backwoods the rounded paw,
Karvahassu [!] halmehista,	Hairy paw from a field,

3 Riksarkivet, Grythytte och Hällefors bergslags häradsrätt, Domböcker vid ordinarie ting, SE/ULA/10338/A I a/3 (1681–1693), bildid: C0105090_00001.

Mullikoita murtamahan,	To pester bull calves,
Vasikoita vainomahan,	Calves to hound,
Hevosia haastamahan,	Horses to hassle,
Karjan laumaa kaatamahan!	Cattle herd to fell!

It was a wise person's duty to ward off the threats that could jeopardise the enterprises of a farming unit and to safeguard the group's resources (Sarmela 2009, 230). A summoned bear was dealt with by counter magic; it was "settled down" (*asettaa*). This demanded a special state of mind from the wise person, who induced a frenzied, motoric trance (see Siikala 2002, 242–246). In Pielavesi, northern Savonia, the agitated sorcerer bellowed: "May the evil flee away, / The beast from these pastures, / Out to the wide world!" (SKVR VII2: 5446). Another way of dealing with a summoned bear was to send it back to its sender, or rather, against the person's cattle. We find a total of eight charms in the SKVR to be used for this purpose.

Despite the interpersonal view of causality, which presupposes an intentional agent behind misfortune and accidents, an aggressive bear was exempted from responsibility for its acts. A fierce bear was not seen as a being with the intention to damage, but primarily as a medium used by malicious humans in their conflicts (cf. Tarkka 2013, 360).

Summary

The aim of this paper was to examine the relationship between swidden cultivators and forest peasants and the bear and to investigate what kind of "bearhood" the communicative bear songs and charms produced, and what these tell us about the relationship between bear and man. Was the bear seen as an enemy by the forest peasants and, if so, in what respect? With increasing animal husbandry, the bear and other predators were naturally seen as a threat to forest peasants and their cattle that were pastured in woodlands and forest villages. This development led to profound changes in the human-bear relationship. Even though the bear was still honoured and treated with respect, it increasingly came to be seen as a beast of prey with a less honourable origin than was the case among earlier hunters. The purpose of the declining ceremonies was no longer to ensure its reincarnation but to send the animal back to its place of origin, Pohjola, the otherworldly enchanted forest.

In spite of these overall changes in the attitudes towards the bear, the songs and charms, which were largely collected during the 19th century, establish an intersubjective and relational stance between bears and humans. Through this communication, the bear was established as a person who was perceived as an intentional, sentient being with the agency and capacity to make choices, and with whom the cattle-minder could reason. Although the protective charms aimed at sending the bear away from the human domain, they still tended to recognise the forest as its legitimate habitat. The charms negotiated in different ways the boundaries for a bear's movements in a space that was shared by humans and bears. Moreover, our sources indicate that the bear's aggressive behaviour was considered unnatural and was suspected of being induced by malevolent people. Thus, the animal was not held responsible for its aggressive behaviour. The claim that the bear was just seen as a beast of prey by livestock keepers therefore needs to be more nuanced.

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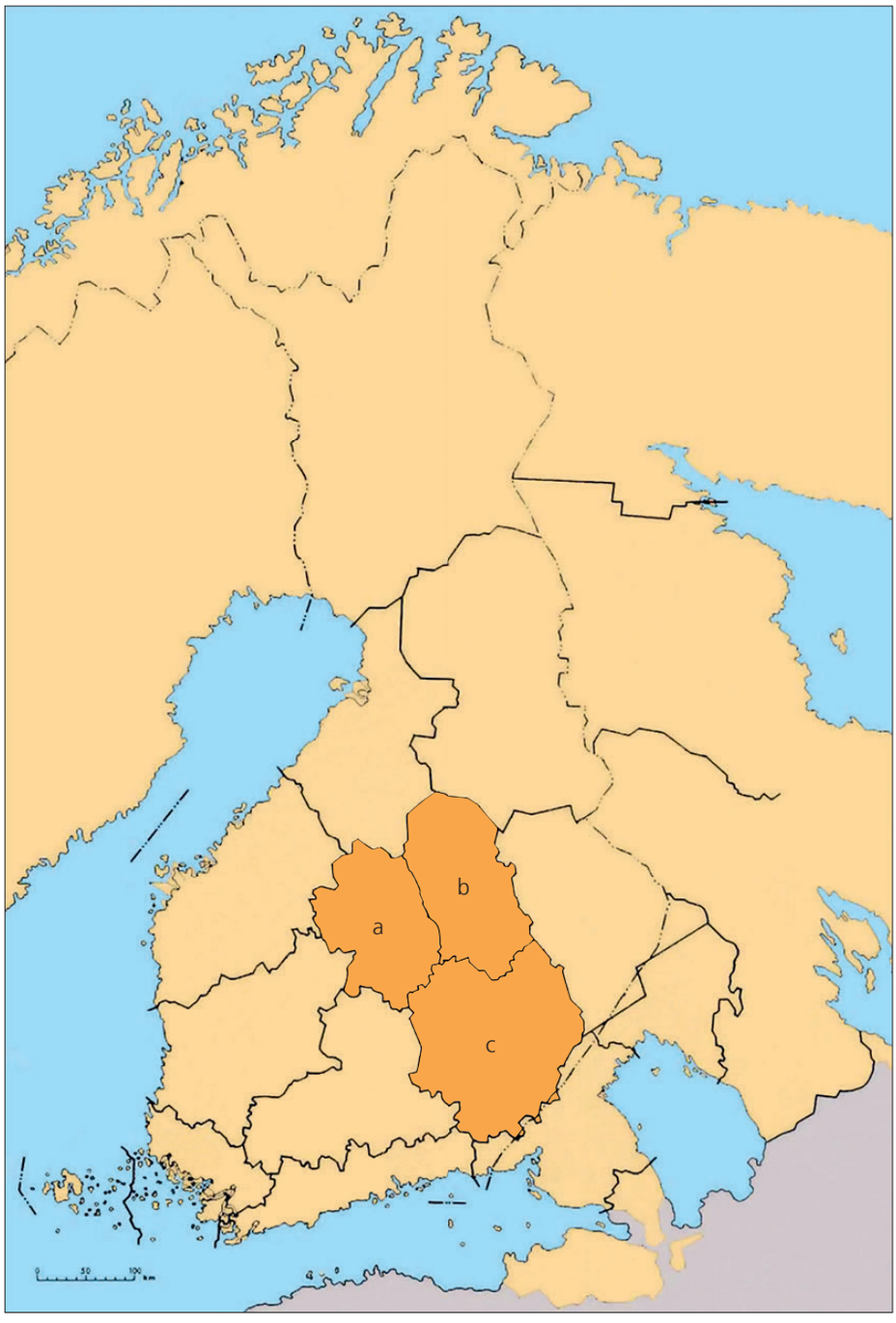


Fig. 1. The cultural areas of Northern Tavastia (a), Northern (b) and Southern Savonia (c) according to The Finnish Literature Society's mapping (map C. Lux-Kannenberg, ZBSA, after a template by M. Sarmela).

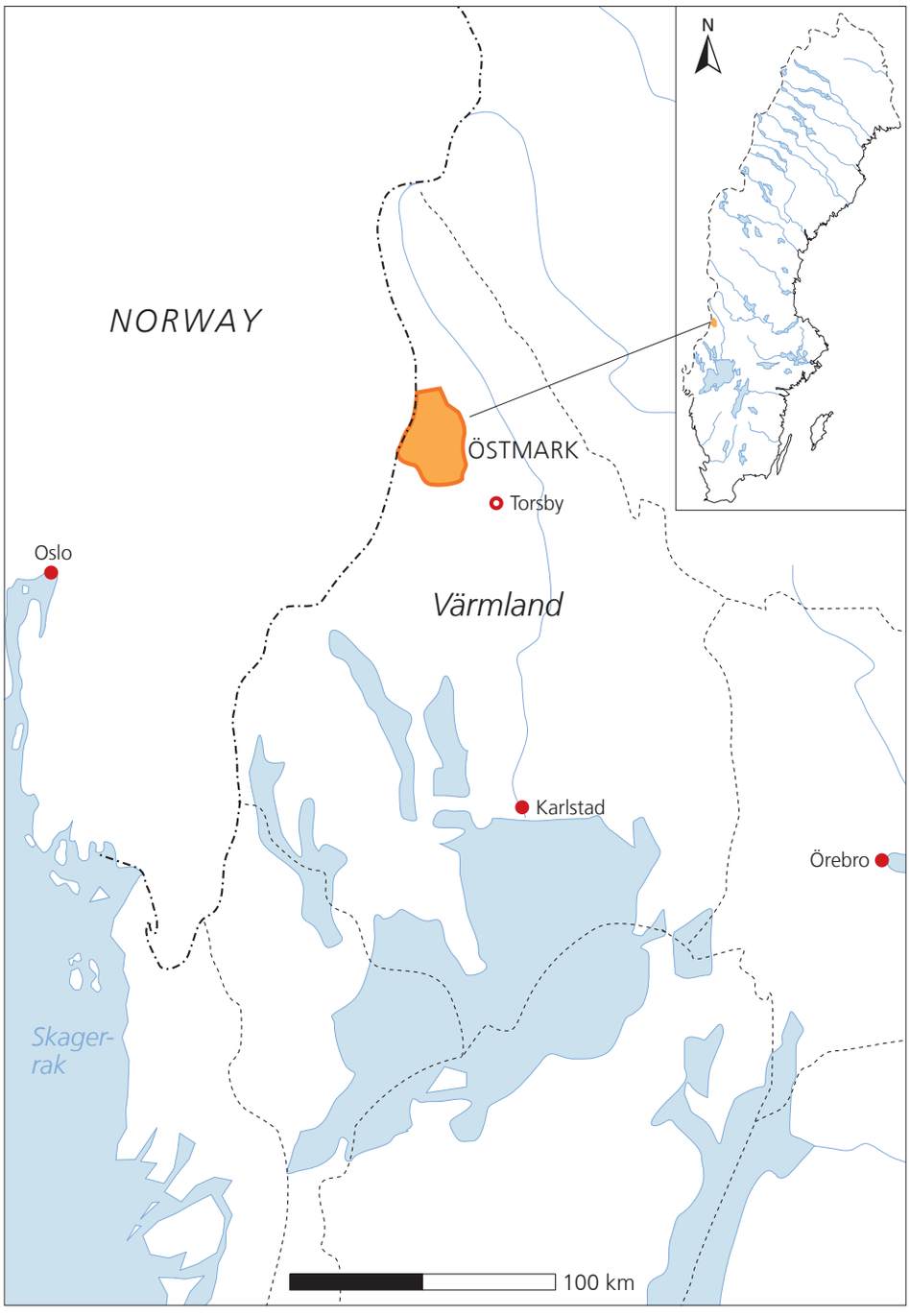


Fig. 2. Värmland in southwest Sweden. Östmark parish and the surrounding area on both sides of the border between Sweden and Norway had substantial Forest Finnish settlements (map C. Lux-Kannenberg, ZBSA, after a template).

Karhurokka – traditional bear meat soup and other bear meat recipes from Finland

By Tuija Kirkinen

Keywords: Brown bear, food culture, recipes, Finland, historical time

Abstract: In present-day Finland, bear meat is served in special restaurants as an exotic delicacy. However, the bear has been a valuable game animal in Finland for ages, and the ritual hunt and the sharing of its meat among villagers have been documented in ethnographic sources. This paper summarises the preparing of bear meat soup in the ritual feast and presents two modern recipes, which carry the memories of historical bear meals.

Introduction

The bear is a large predator, with a weight of *c.* 60–300 kg, which provides its hunter with a large amount of meat. This meat is dark, low-fat and coarse-grained, and its strong taste varies according to the animal's age and the food it has consumed during its lifetime. In general, a bear carcass is treated in the same way as a pig's, and it needs to be gutted soon after the kill. The meat has to be cooked properly because there might be trichinae (*Trichinella spiralis*) in its muscles (Kolmonen 1988; Aaltonen/Arkko 1998).

In present-day Finland, bear meat is served in special restaurants as an exotic delicacy. However, the bear has been a valuable game animal in Finland for ages. Even during the 19th century and at the beginning of the 20th century, it was hunted in its winter den in late February or March, when there was a shortage of food. The act of hunting has been described in detail in Finnish epic sources, which carry legacies of pre-Christian rituals and mythology (see Piludu, this volume). The core of this tradition was the idea of the bear's divine origin and its special relationship to humans. Therefore, the respectful killing and eating of the bear needed to be controlled by rituals. The ceremony culminated in a feast, in which bear meat soup, *karhurokka*, was shared and enjoyed (see Haavio 1967, 16–41; Honko 1993; Tarkka 2005, 272–274; Pentikäinen 2007, 65; Krohn 2008, 146–164; Sarmela 2009, 79–94; Siikala 2012, 368–370).

The earliest literary reference to the eating of bear meat is from 1320 in the Black Book of the Turku Cathedral (*Registrum ecclesiae Aboensis*), describing that some of the priests used to collect bear meat, i.e. bear shoulder or smoked bear-gammon, called *böste*, for taxation (Aaltonen/Arkko 1998, 168; Seppälä 2009, 57–58, 134). At the same time, bear skins, donated by hunters, were used by the Church as carpets in front of the altar (Korhonen 1982a; b; see also Jahnsen, and Korhonen, this volume). These acts might be connected to the aim of the Church to secularise the bear, which was valued in folk religion as a possessor of supra-normal qualities (Korhonen 1982a; b; also in Greenland: see Østergård 2009, 120–121).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 777–780 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134361

The slaying of the bear in its winter den was considered a heroic act, and bear killers were honoured and admired. Alongside the modernisation of the world at the end of the 19th and the beginning of the 20th century, big game hunting became more of a sport for the upper class in Finland, Russia, and Germany. For example, Aleksander II of Russia visited Finland for bear hunting several times during the 1870s (Peltonen 2020, 129–133). Gradually, environmentalism changed the attitudes against the killing of the bear in its den as well as the use of foothold traps, which were banned in 1964 (Peltonen 2020, 133–134). During the hunting season in 2020/2021, a total of 342 bears were killed[1] and their meat was cooked by hunters or sold to restaurants. The current bear population of Finland amounts to *c.* 2,000 individuals (2,020–2,130 animals before the hunting season in autumn 2019[2]).

In the following, the traditional way of sharing bear meat soup, *karhurokka*, as well as two modern recipes are presented. The first one of these, bear palms (Fig. 1), might have similarities with the bear feast tradition, in which it is mentioned that paws were eaten. The second one, *böste* (bear ham), refers to the medieval way of smoking bear ham, as mentioned above. However, the role of the bear and its consumption among the Sami are omitted from this paper.



Fig. 1. Bear palm (photo E. Tuominen, The Hunting Museum of Finland, photo archive).

1 Cf. oma.riista.fi/static/bear/bear.html (accessed: 01.03.2021).

2 Cf. suurpedot.fi/lajit/karhu/esiintyminen-ja-maara.html (Finnish), or: largecarnivores.fi/species/brown-bear/number-and-distribution-of-bears.html (English) (accessed: 01.03.2021).

Traditional bear meat soup *karhurokka*

The bear hunting ritual has been described in its entirety e.g. by Sarmela (2009, 80–88) and by Piludu (this volume). Here, the focus is on the consuming of bear meat and the treatment of the carcass.

The ritual slaying of the bear took place in late February or March, in its winter den where the bear hibernated, possibly with its cubs. The den was first identified by men who then marked the location soon after the bear had retired to sleep. After the kill, the sharing of bear meat and skin followed a hierarchy in which the owner of the land on which the den was situated and the slayer of the bear got the most valuable parts. However, a bear is a big animal, and the sharing of food was a communal act in which all villagers had their part.

After the ritual killing (see further in Sarmela 2009), the bear was carried to the village and skinned. This moment was honoured by the women, who expressed mourning by singing dirges in the same way as in the case of human funerals or weddings (Tarkka 2005, 273; cf. Pentikäinen 2007, 81). The cutting of the bear's meat needed to be done carefully without breaking the bones, which were meant to be returned to the circle of life in the forest at the end of the feast (Sarmela 2009, 80–81, 85). The following description is based on M. Sarmela (2009, 79–106): In the hunting feast, the bear was the guest of honor, which was marked by placing the skin at the end of the table. A meal the sources especially mention is soup, which was made of the head and sometimes also the paws of the bear. The head was considered the most valued part, and its nose, ears, and eyes were considered to have special powers, i.e. the bear's senses of smell, sight, and hearing. Accordingly, by eating the bear's brains, its wisdom was assimilated by the consumers. By eating the paws, the bear's power was transferred to the consumer and, in the case of the claws, their sharpness.

After cooking, the head was served on a table and all the meat was picked off it until the skull was clean. We do not have any detailed information about the ingredients of the soup other than that it was forbidden to add agricultural products, such as cattle meat or vegetables, to it. This might originate from the idea that the bear was a threat to cattle and that these worlds, domestic and wild, were meant to be kept separate from each other. At the meal, the skull dish was placed at the top of the table, followed by the other bear dishes in anatomical order. The head was consumed by the men who had slain the bear, and the rest of the bear was shared between the villagers. Finally, all bones were collected and carried to a forest, where the skull was placed in a sacred pine and the bones were buried under it.

Two modern bear meat recipes

Bear palms

The edible palms can be cooked with flavourings (e.g. herbs, juniper berries). Others marinate the palms before cooking. For example, sweet and sour spice broth made with honey softens the paws before cooking.

1. Skin the bear's palms.
2. Crush the berries and mix all the ingredients.
3. Rinse the palms and place them in spice broth for two days.
4. Put the palms, water and spices in an ovenproof dish. Cook the palms in the oven at 150 degrees until their cartilage is soft, for at least four, but maybe even seven hours. It is important for the taste that the finger cartilages have softened.
5. Cut the fingers apart. You can offer them stewed in this way or fry them in a pan with butter. One can also marinate them before stewing (after Kolmonen 1988, 113–114).

Böste (bear ham)
The bear ham is removed from the carcass in the same way as pork ham; the membranes are carefully removed by scraping. The ham is marinated for 24 hours and must be turned frequently. It is then placed in a baking bag with other ingredients strained from the marinade and cooked in an oven at 245 degrees for 80 minutes per kilogram. The frying broth is retained for the sauce. Serve with potatoes, together with cranberry and rowanberry jelly. You can also smoke the ham in the sauna slowly and enjoy it in the same way as the churchmen did centuries ago (after Aaltonen/Arkko 1998, 170).

Acknowledgements

I am deeply grateful to Pekka Allonen, Taru Liukkonen, Perttu Matero, and Jukka Peltonen (all: The Hunting Museum of Finland), and Maarit Knuuttila, Teppo Korhonen, and Johanna Mäkelä (all: University of Helsinki) for their kind help with this paper.

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Bear skins as a church offering

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Keywords: Finland, bear skin, hunting prey, church offering, saints protecting cattle

Abstract: In the north, it was long legal to hunt bears anytime and anywhere. From the mid-Middle Ages until 1891, livestock owners were obligated to participate in common hunts, which comprised the whole parish and were led by a hunt bailiff. Until 1640, the bear skins acquired in these hunts could be donated to the church, but after this they belonged to the hunt bailiff of the jurisdictional district. According to Olaus Magnus, the peasantry of the Nordic countries promised the skins to the church to avoid being savaged by the beasts. It seems that the skins were given in the hope that bears would not kill the farmers' domestic animals. The calendar of the saints included about ten names whose bearers were thought to be able to control the savaging beasts, or to increase the well-being of the livestock. St George, St Margaret, and St Michael, who had each defeated a dragon, were seen as more powerful than the others. This article follows the journey of the bear skin, acquired in a hunt, from the pre-Christian bear killing festivities to the altar of the Christian church, to the kneeling stool and the pulpit. There it served mainly as a warmer under the priest's feet in the cold church, but possibly also under the wedding couple's feet to strengthen their wedding vows and, on etymological grounds, later also as the mass chasuble of the priest. At the peak of this tradition, there could be four skins in one and the same church. The Finnish data consists of information from 32 churches. The earliest mention of the custom is from the 1400s, the latest from 1936. There are only a couple of mentions of a bear skin being replaced by a wolf or seal skin.

Introduction

In his *History of the Nordic Peoples* Olaus Magnus explains how the tradition was practiced in the early 1500s (Olaus Magnus 19, XVI:20; transl. by the author of this paper):

When the Nordic people leave their remote villages to go to church, they take only a crossbow, a sword and an axe as weapons with them. The bow is used to defend them against wild animals, most of all huge bears and greedy wolves, which during the three months of January, February and March are usually wilder than in other seasons. And before leaving they have a habit of giving God a promise, which they also honourably keep, to give the skins of the wild animals that they manage to kill as offerings to the church to be used as a cover for the altar stool under the priest's feet when he is performing the mass. The custom of priests standing on a bear skin in the freezing cold when reading the mass stems from that. If, instead, they have got a wolf, a lynx, a fox or some other wild animal with a net or a trap, the money from the skin is piously spent on wax candles.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 781–794 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134362

The writer generalises the giving of the skins to the church to encompass all the medieval Nordic countries. It is true that in Iceland, for example, there was a skin of a polar bear in a church, and those of brown bears were present in the cathedrals of Trondheim and Turku (Islands Kirker, Norges Kirker: REA 676). It was not only the most central churches that received skins, but also churches in areas that were rich in bears (e.g. Dalarna, Härjedalen, Norrland, and Västmanland in Sweden; southern Finland); there are mentions of skins in ordinary sanctuaries from the 1600s and the 1700s (Erixon 1921, 90; Boëtius 1932, 127, 144; Hamberg/Berlin-Hamberg 1966, 264; Korhonen 1982, 46). The observations described in this study are mainly based on mentions I have found for 33 Finnish parishes (see Jahnsen, this volume, on Norway). The concentration of the data in the area of southwestern Finland is largely due to the way the series of books "The churches of Finland" is published. The volumes are arranged into deaneries, starting with the southwest, and the series does not yet cover the whole country. Also, more histories have been written about the wealthy parishes of the south, with depictions of their churches, than about other areas.

How the skins ended up in the church

The necessity of having a bear skin in the church can be seen in the fact that one could be purchased for the church in the market. There are altogether nine cases like this in the data. In 1517, it had already been noted in the accounts of Tyrvää church that Mr Mikaeli had purchased a bear skin for the church for two and a half *eyrirs* (Hausen 1881–1883, 411). In Loimaa, they had a bear skin made into an altar rug in 1685, and the Uskela district court transcript states that the chaplain of Pertteli had purchased a bear skin in Kuusjoki in 1690. A skin was purchased to serve as an altar rug in Masku in 1701 and in Maaria in 1723; the latter skin was sold again in 1780. In Luumäki, the church paid five copper coins for a bear skin in 1734. A skin was purchased for the church of Älvros in Härjedalen for one copper coin less in 1614. A bear skin was acquired and modified for the church of Gagnes in Dalarna in 1679, and it was placed in front of the altar. Also, the paraphernalia of the Kisko church, which have subsequently disappeared, included a bear skin that had been placed in front of the altar in 1758. The skins acquired for a couple of other churches in the 1700s later disappeared from the records (Boëtius 1932, 124; Oja 1938, 25, 27; Riska 1959, 56, 159; 1961, 767; 1964, 86; 1979, 40; Hamberg/Berlin-Hamberg 1966, 264; Riska/Sinisalo 1968, 133).

On the other hand, *private* persons *donated* bear skins to the church. A manor bailiff, one or more farmers, a horse estate owner, a horseman belonging to the German troops, a sergeant, a young powder boy, a hunt bailiff, and a ground official are mentioned as donors (Oja 1938, 17, 25; Riska 1980, 29). Merchants and noblemen are not mentioned among these.

One group among the donations were skins acquired as the result of communal hunting, which was governed by the law. The oldest data about a donation related to this kind of hunting is from Halikko from 1634, when a peasant was ordered to pay a penalty of 40 marks because he had hidden and privately sold two bear skins acquired in communal hunting, without the hunt bailiff and the whole hunting party knowing about it. The man was obligated to acquire the skins back, so that one could be given to the church and the other sold to benefit the penalty fund of the district court. The skin was still in the church in the early 1700s (NA cc 3: 100; Riska 1966, 152).

There are mentions about donations to the church of skins acquired in communal hunting carried out by the parish residents from the 1630s onwards for about a hundred years. This is surprising, because, according to the legislation, the destiny of these bear skins should have undergone a change in the 1600s with the new organisation of the hunt bailiff institution (Korhonen 2020, 268–280). We can see in the correspondence between the governor general of Finland, Per Brahe, and Queen Christina of Sweden that the former suggested that the skins acquired in communal hunting be given

to the hunt bailiff as wages and that the latter considered this a good suggestion. Apparently, this kind of decision came into effect in 1640, and at the same time a hunt bailiff was to be placed in every county (NA RR 26.3.1640 f. 227). This is reflected in the Lohja hunt bailiff's demand in l672 to get and lawfully deliver to him a skin donated to the chaplain of Pusula by a hunting party (NA ll 5: 571v; Ylikangas 1973, 245).

Evert Jordan, who worked as sub-hunt bailiff of Finland in 1688–1703, took a skin that was brought to the tanner by the people of Uskela in 1690 and meant by them to be given to the church. The same year, two bears were caught in Pernaja, and their skins were divided between the hunters. This caused a fight, and one skin was cut in two and the other was given to three men. The hunt bailiff, Jordan, brought the matter to court, referring to the decision made by the king on March 4th in 1678, which, according to him, said "those skins that are acquired in a hunt belong to the hunt bailiff". He was sent nine bucks for the torn skin and 12 for the whole skin as compensation. Jordan thus took advantage of the answer the king had given to the peasantry of the Upper Satakunta region when they had asserted in their appeal that they still wanted to give the skins to the church of their parish, not the hunt bailiff. In answering the king referred to the decision made in 1640 (NA RR 20.2.1678 f.19, 2 §; NA cc 18:81; Samzelius 1915, 634; Antell 1956, 193).

The status of the hunt bailiff as the legal receiver of the skins either did not become common knowledge, or the demand was not seen as justified; people still wanted to give the skins to the church as was the old custom. The diary of the parish assistant of Vahto states that, in 1727, the people of the parish killed a bear, whose skin was promised to the local chapel church. Four years later, the peasantry of the same region had another successful bear hunt. This skin was given to the church of Maaria (Oja 1938, 25). The famous sacrificial church of Luoto in Pyhämaa received bear skins to be used in front of the altar at least in 1728 and 1733. The skin was in use on the altar until 1804 and was still there in 1936 (Oja 1938, 24, 29; Riska 1959, 270). Also, the church of Parainen became an altar bear skin owner in 1729, when a bear was brought down at the end of a communal hunt (Nikula 1973, 76).

If a church was already sufficiently equipped, the skin was seen as belonging to the hunting party or the bear killer. Thus, the men of Hattula and Vanaja drank the worth of the bear skin by mutual agreement in a tavern in 1672, which offended the local hunt bailiff. Similarly, in 1708, the residents of Lohja kept the skin of the bear they had killed and decided to give it to the local church. The hunt bailiff prevented this by taking possession of the skin, after a horse estate owner had revealed that he was guilty and had kept it himself and had not delivered it to his superior, the hunt bailiff (NA Raasepori ll 5: 691–692 and ll: 376; Ylikangas 1973, 246–247). Since the appointing of hunt masters seems to have been quite arbitrary, this might also in part explain the fact that the skins were still given to the church, especially in the early 1700s. All these cases do not therefore imply civil disobedience: There would not always have been a legal recipient for the skin, so people could stick to the old custom with a clear conscience and donate the skin to the church.

The skins acquired in private hunts could naturally be kept, sold or donated to anyone. Apparently, this kind of skin was in question when the vicar of Isokyrö, Isak Brenner, received one in 1650, and it remains unclear what kind of hunt it had been after which the "bear killers of Nurmo" donated a skin to the Lapua church in 1673 (NA RR 5:253 and 7:148; Koskimies 1908, 87; Luukko 1945, 205).

The location of the bear skins in the church

The mentions of bear skins in Finnish churches in chronicles can be divided into four groups. The first group consists of mere mentions of the existence of skins in a church in the year an inventory was taken and other arbitrarily retained knowledge about them (for example Lokalahti and Uusikau-

punki in the 1700s). All in all, there are 14 data entries that locate a skin in a church: Six of them are from the 1600s, seven from the following century, and the most recent one is from 1893.

The information about the more exact locations of the skins reveals that they were located *somewhere around the altar* (Pertteli, 1690; Luumäki, 1734). The more exact expressions are divided into: *in front of the altar* (Piikkiö, 1707; Aura, 1730; Kisko, 1758; Dalarna; Boëtius 1932, 124) or *as an altar rug* (Loimaa, 1685; Masku, 1701; Maaria, 1723; Jääski 1893; Salenius 1870, 97; Oja 1938, 25), and they are mentioned five times as being, generally, *on the altar* (e.g. Lieto, 1730; Riska 1964, 267), in the Dalarna Mickelsfjärd chapel in 1744 *fanns en biörn hud inuti altaret* (i.e. "a bear skin on the altar"; Boëtius 1932, 144), and *on the steps of the altar* (Valkjärvi; Salenius 1870, 97). In a judicial conflict that took place in Turku in 1685, professional furriers accused a certain furrier of acting without a license, threatening to take a bear skin away from him. The accused then promised to give the skin to the poor house to act as the cover of the altar stool (Pylkkänen 1970, 107). A skin is twice mentioned as being *next to the altar* (Muurla, 1791, Uusikirkko Vpl., 1767; Oja 1938, 25; Riska 1966, 116, 175), as well as being the cover of the *kneeling stool* of the altar, but as being *in the pulpit* only once (Lieto, 1730; Angelniemi, 1757; Riska 1964, 267, 285). A few churches had several skins – up to four (Elimäki, 1745; Kokkonen 1931, 80), which was enough for the altar, the kneeling stool and the pulpit. Perhaps the rug near the altar was also situated under the bride and bridegroom's feet. This practice derived from old beliefs in which the vows sworn standing on a bear skin were considered stronger than other vows. Skins were replaced in the 1900s by woven *rya* rugs, which were donated by home societies and handicraft societies to churches (Korhonen 1999, 160–173).

Also, the priest's original mass gown could be an animal's furry skin, thrown over his shoulders. When, in 1927, Toivo Kaukoranta pursued the meaning of the Finnish word *hakuli*, of which the most commonly known seemed to be "a child's single thin hair" or "a sheep's first wool", he simultaneously, hesitatingly, introduced an etymology for the word. The root is the Gothic *hakuls* "an animal's fleece, skin", which also was the root for the ancient Swedish *hakul* and also e.g. *messhakel* (mass chasuble), and from these the modern Swedish word *mässhake* or "mass chasuble" was derived (Kaukoranta 1927, 55). To support this assumption, we can use a certain verse from White Sea Karelia (Viena Karelia). Since it is a bear poem, also discussing the fate of the bear skin, we can notice that apparently not any skin would do as a chasuble; it had to be the most powerful kind (Krohn 1914, 160):

> You won't be put in a bad place
> but in a good place,
> as the bishop's long sleeves,
> as the clothes of the authorities.

In this connection, it is also interesting to note that in Siberia the attire of an haruspex included bear claws, bones and skins until recently (Harva 1933, 339, 345). In the Late Middle Ages, bear skins were accepted as taxes and also bought by the crown but, nevertheless, there is no information on them from Finland in connection to the attire of the aristocracy; the same also applies to the following Renaissance period (Pylkkänen 1956, 87, 96; Jokipii 1967, 25–27). It is not until the Baroque period that we know that textiles made of bear skins belonged, in particular, to the aristocracy's winter sleigh accessories, such as fur rugs, covers, foot bags, muffs, mittens and even caps (NBA: HTKA Mäntyharju; Pylkkänen 1970, 107; Korhonen 2020, 62–65). Skins were also given to the priest to be laid on the guest room floor. Among the peasantry, pieces of bear skin were most commonly seen in eastern Finland on top of the shaft bow of a horse harness, a so-called *umber*, which originally had a protective, magical purpose (Vilkuna 1940, 43–54). Possibly the men from Pyhtää in the aforementioned case were cutting their bear skin for this kind of use when the sub-hunt master, Jordan, interfered in the matter.

According to Olaus Magnus, the bear skins that were not donated to the church were sold, and wax candles were bought with the resulting funds (Olaus Magnus 1916, XVI:20). However, the Raisio church bought a wolf skin to serve as the altar rug for six bucks in 1670. A little more than half a century later (1728), a wolf skin is mentioned as being the cover of the kneeling stool of the Kaarina church. The wolf skin donated by the Luonnonmaa peasants was also in similar use ten years later (1738) in the Naantali church, but was probably abandoned in 1766. At that time, the widow of a magistrate, Maria Åsten, donated a red damask spread for the stool; this was trimmed with silk and gold thread fringes and decorated with the donator's initials and the year 1766. The decline in value of wolf skins can also be seen in a piece of information according to which the wolf skin acquired in a hunt in Parainen in 1752 was sold due to the request of the governor and the money was spent on new gunpowder for beast hunting (Riska 1964, 34; Lilius et al. 1972, 72, 121). In the Kalmar province in the 1700s, the skins of wolves acquired in common hunting were placed in the church chest until they were sold at an auction. The revenue was spent primarily on rewarding the person who had first spotted the beast. It had thus become some kind of bounty (Hammarstedt 1920, 117).

Why were some wolf skins not sold but used in interior church decoration? Perhaps bear skins were not available at the time and people wanted to place some kind of skin in front of the altar. This explanation is partly supported by information from the outer Turku archipelago, where a large seal skin was purchased for the altar floor of the local church in 1733 (Nikula 1973, 226). This use of local, available resources is emphasised among the Sami people, where the most important church sacrificial skin is a deer or reindeer hide (Itkonen 1913; Hammarstedt 1920, 115–116).

The skins of the smallest fur animals also seem to have been given to the church, at least in northern Ostrobothnia and in Perä-Pohjola. In Oulunsalo, even non-locals put sacrificial furs in the branches of the candelabrum on the designated date in 1736. This kind of practice might have been based on the regulation made by Queen Christina, according to which it was permissible and even advisable to remember the House of the Lord and the poor with, for example, candles and furs, when God had saved the person in question from misfortune (Suolahti 1912, 20; 1919, 139).

The decrease in skin entries in the late 1700s and the data on the selling of them must probably be seen partly as an accomplishment of purism. The skins were seen as futility items and emblems of paganism or Catholicism. A certain Bishop Getzelius' letter refers to this, and Swedish visitors commented on it more than once (Suolahti 1912, 20; Hammarstedt 1920, 114–116). Along with new, beautiful textiles, noblemen and women were also able to emphasise their piousness through their donations in this domain as well. This is probably partly also due to the decrease in the beast population, when plantations expanded and the apparently overlarge steady bear population at the time of the Great Northern War was reduced to normal numbers.

The nature of the offering

In the sources I have used, it is not once mentioned that any skin was given in return for the donor's life being saved from a beast attack. Thus there is no evidence of them being given as a thanks offering in the same way we know votive ships have been donated to the church.

Therefore, the offerings were probably given in advance, as a form of preventive magic, at least for the most part. The need for prevention was not directed towards the donor himself but his property, in this case livestock. A former study (Oja 1938) ended in a cautious presumption about bear skins being donated to the church in the name of St Bartholomew. This was, on the one hand, based on the statement that some skins were donated between August 20th and 30th, between which dates St Bartholomew's Day (August 24th, Finnish: *Pärttyli's Day*) happens to be, and, on the other hand, on the fact that the symbol of the apostle in question is his own skin or a skinning knife (Oja

1938, 29–30). But to make such a generalised presumption, the precisely-dated (exact day of donation) material is too scarce. When, however, we look more closely at those four mentions that the presumption was based on, we can observe that in one case (Lohja, 20.8.1646) it is the donation day in question, whereas in the other three cases (Lohja, 27.–29.8.1706; Vahto, 30.8.1727; Paattinen, 23.8.1731) it is the day of the common hunt in question (Oja 1938, 25; Ylikangas 1973, 246). According to the church archives of the Skultuna church in Västmanland: "A bear skin was placed on the altar on the 7th of November in 1673. It originated from a bear that had been caught with great effort and with three men being hurt in the Eckieby forest in the hunt arranged on the 6th of July" (Hammarstedt 1920, 117; Erixon 1921, 90). When we further remember that the skin in Turku Cathedral in the 1400s was on the altar of St George, not in the apsis of St Bartholomew, which was located in the same church, it becomes evident that we need to look at both the dates, the donations and on which days the beasts were hunted, and at the connection of the saints to beasts, especially the bear.

The old laws in Sweden, some of which have also been applied in Finland in some places, ordered everyone to hunt for the bear and the wolf whenever they had caused damage. Of the regional laws, only the more recent one in Western Götaland County defined four fixed bear hunting days in the year: 1) on the fourth day after Easter, 2) on the fourth day after Pentecost, 3) five days after St Michael's mass, and 4) on the fifth day after Christmas.

The country laws did not give any kind of instructions on the date of hunting but apparently the hunt was held at least around Pentecost, because the inspection of the nets used in the hunt was prescribed in the country law of Magnus IV of Sweden to be held at exactly that time, simultaneously with one hunt prescribed in Western Götaland regional law (SLL 1946, 357; Konung Magnus Eriksons Landslag, 156). In the patent granted by Charles IX in 1608, one compulsory hunt was prescribed to be held annually, but without defining the date any more precisely (Pentecost?), and on other days as needed. In the so-called Rosengren's Suggestion related to the patent, it was recommended that hunts be held in autumn and in spring and according to need (Kongl. Stadgar 1706, 126; Rosengren 1864, 381). At some places in the Satakunta region, three hunts were carried out in the autumn of 1628 (Pirkkala ja Karkku, NA nn 2: 20 v. 45).

The hunting regulations of 1647 and 1664 did not contain any kind of statutes about the dates or the number of hunts, and the common realm law of 1734 also acquiesced to just recommend particular activity during the littering time of the beasts (SRL 1934, 87–88). The dates and number of compulsory hunts were the "hot topics" of parliamentary discussions in the late 1600s and the early 1700s, because the sensibleness of them greatly depended on local circumstances. They were legislated in the directives of the governors related to the realm law in 1734. Hunts were allowed to be organised during the busiest working time or in good winter weather only in an extreme emergency (when the beasts had caused great damage); also holidays were prohibited (Samling af Instructioner 1852, 384; 42 §; Korhonen 1977, 57).

Even though it is only randomly possible to verify the attaching of the communal bear hunt to a certain time in the yearly cycle on a legislative level, on the other hand, we know from the old calendar tradition that rites were carried out on certain days to protect the livestock. This is where the saints come in again.

Saints as the protectors of livestock and the enemies of beasts

In the yearly cycle, January was the time when people's traditions began to focus on the bear. When hibernating, the bear was believed to turn over on his side on *Henry's Day* (January 19th/20th), stating "Night halfway gone, hunger in my stomach, a ball of pitch in my rectum". After this, it resumed sucking on its paw and went back to sleep. On Henry's Day, children went around the houses in the

village and hit the walls with a beater or mallet to mark the middle of the winter, after which the bells and jingle bells of the livestock were sounded, and metal dishes were rattled and drummed to drive the beasts away from the vicinity. Henry's commemoration day happened to be close to the middle of winter, and the bear turning and the dividing of the winter in two have remained the traditions of that day (Vilkuna 1969, 36–37).

In the eastern Finnish cultural area, the matron hung a cowbell on the coal hook on *Maundy Thursday* and tied a knife, a sickle, shears and coal- and shingle pliers to her waist. Then she went around the yard with an axe and a burning torch in her hand. At the corners of the buildings she hit the log with the end of the axe, saying: "Evil spirit, go to the woods!". With the help of this measure, borrowed from the use of incense during the Catholic church service, people believed that evil forces could not get into the house and yard in the summer to do harm. The lighting of bonfires had the same aim. The Ostrobothnian Easter fires had elements that showed they had another purpose, too, apart from the scaring away of witches; straw – the growth of the field – and leaf-branches gnawed by sheep, i.e. the food of the livestock, were burnt on the bonfires built on the fields. Bonfires were lit in some places in Finland at Shrovetide, at Easter, on Summer Nights, on Ascension Day, at Pentecost, and at Midsummer, the last of which is the oldest and most widely spread of the bonfire lighting days. The most important purposes of the lighting of the annual bonfires were the securing of a good harvest and a plentiful livestock yield (Vilkuna 1969, 88–95; Sarmela 1996, 94–98).

Legends and folk beliefs mention several saints, both men and women, who had the power to prevent beasts from harming the livestock. The nights before the commemoration days of Julian, Justinian, and Tiburtius (April 12th–14th) were known as S*ummer Nights*. Shepherds climbed up the hills early in the morning in southeastern Finland to play bugles at the four compass points. In the Savo region, they had *Hollering Nights* when they called out loud: "Dear George, St George, tie up your hounds from Summer Nights to Winter Nights". Simultaneously, they lit bonfires on the hills. The controller of the beasts mentioned in the refrain was St George. He was known by many other names like *Jyrki, Jegor, Yrjö, Yrjänä,* or *Ilja* in Finland. The commemoration day of St George was celebrated on April 23rd in memoriam of his decapitation in 303 by ruling of the emperor, Diocletianus. According to the legend that was popular all over Christendom in the late 1300s, George had defeated a dragon that demanded people and livestock as offerings. Additionally, he recreated a poor plowing man's ox and got a poor widow back her sheep (Mansikka 1943, 190; Vilkuna 1947; Braun 1964, 283–287). Naturally, such a benefactor was asked to protect the livestock from more familiar beasts, too. There was a bear skin on his altar in Turku Cathedral already in the 1400s.

Verbal pleas, in which the saints were asked to put the wolves and bears in an iron shackle, are familiar from western Finland to Russian Karelia. The custom even spread along with Forest Finns to mid-Scandinavia, where Swedes assumed the custom in some places but instead addressed the plea to Peregrinus (May 16th), whose commemoration day was the same day the livestock was let out into the fields. St George's Day is mentioned as the day the livestock was let out into the fields in central and eastern Finland, Karelia and Ingria. In White Sea Karelia, St George was thought to especially protect horses from bears (Mansikka 1943, 185, 191–192, 194; Vilkuna 1969, 122–123).

In Georgia, the cult of St George is as old as Christianity. It spread from Asia Minor to southeastern and eastern Europe. Although St George was, above all else, seen as the lord of the wolves, his might extended to bears as well. The Ukrainian Slavs asked St George on the day the livestock was let out (Mansikka 1943, 185):

> You, our brave George
> protect our livestock in the fields
> and outside the fields,
> in the forest and outside of it

from the greedy wolf, from the angry bear,
the treacherous wild beast.

In eastern Finland, the commemoration day of St George was so established as the day the livestock was let out that people asserted: "George will even carry the cows on his back". Although there was still snow on the ground and the water was frozen, the custom was at least ceremonially adhered to by letting the cows out of the cowshed to stretch their legs for a while. Depending on the circumstances, the day they were actually let out could be delayed by a week or even by three weeks, though it would still be on the same weekday as the actual St George's Day. On the same day people in the eastern Finnish cultural area and in East Karelia hung cowbells around their necks and ran around the houses sounding the bells and making other kinds of noise and banging the trees in the nearby woods to shoo away the beasts (Salmelainen 1852, 127–128; Mansikka 1943, 169, 177–178, 190; Vilkuna 1947).

The bear had two commemoration days, one of which was related to birth and the other to killing. As to the saints, the killing day was the same as the birthday, which meant being reborn to a new life that happened at the moment of death. Another commemoration day of the saints was the day of moving their bones. The bones of the bear – the skull especially – were moved to a bear cemetery during a funeral feast and were lifted onto a tree close to good hunting grounds. The memories of the commemoration day of the bear (July 13th) have become nearly completely buried under Christian traditions. An example of this is thought to be the location of the church named after St Margaret on Bear Island in the Ii parish in northern Ostrobothnia, where a pine with a bear skull once stood. The bear killing of the old times, with its festivities and bear weddings, was concentrated on the midwinter and the midsummer festivities. Every year, on these days, people sang certain poems to protect the herdsmen and the livestock from bear damage and to ensure the bear killing would be successful. The successful bear killing was followed by feast poems (Haavio 1967, 457–460; Vilkuna 1968, 176–178; Sarmela 1996, 38–43).

To obfuscate the pagan celebration of the old commemoration day of the bear in the summer (July 13th), the Catholic priesthood relocated *St Margaret's Day* (Finnish: *Marketta*) to a week earlier in the countries of the northern Dominican missionary district in the Baltic region, Finland and Sweden. According to legend, Margaret beat the accosting devil, which was disguised as a dragon, with the help of her cross and her faith. In medieval church murals, the saint was represented fighting the dragon, holding a triple-forked spear or a cross-headed staff that she was cramming in the beast's maw. The people understood the weapon to be a rake because the saint's commemoration day happened to be at the beginning of haymaking time. She was asked, as was St George, to close the mouths of both wolves and bears with her triple-forked spear (Vilkuna 1969, 206–210).

In Estonia, the whole of July was sometimes called "bear month". "Bear day" was the bear's birthday, which was celebrated by singing poems aimed at protecting herdsmen and livestock and by making offerings. The Catholic church was again able to undertake measures to replace bear worship by remembering St Margaret. The church of the Karuse (meaning "bear") jurisdictional district in Estonia (dating to 1271) was dedicated to St Margaret, and July 13th was celebrated here with great festivities. Even after the Reformation in 1683, it was marked with regret in the minutes of one parish that St Margaret's day was continually held sacred in fear of bears otherwise killing the livestock. One description from 1732 states that people avoided working on Margaret's Day/the commemoration day of the bear so the bear would not cause damage. According to the vicar, Christfrid Ganander, the same forbiddance of work applied to Olaf's Day (July 29th) in Ostrobothnia in the late 1700s. Later, the inhabitants of the Virumaa coast believed that they could protect themselves from bear damage by pushing a copper coin as an offering into a slit in the church floor on Margaret's Day (Vilkuna 1968, 174–179, 187–190). Mall Hiiemäe has pointed out that some notes relating to the "Day of the

Bear" (*karusepäev*) are specially related to farming, not to hunting culture. In this connection, she sees, as does K. Vilkuna (1969), the link between St Margaret's Day and the hairy caterpillars that damage cultivated fields (Hiiemäe 1998, 158–159). Additionally, both in Finland and in Estonia in ancient times the surface of a field and the weed damaged by caterpillars were tended with a multi-spiked wooden harrow. The appearance of the object resembled a bear skin, which gave rise to the Finish name *risukarhi* and, in Estonian, *karuäke* (Räni 1955, 39; Anttila 1968, 14–23).

St Bartholomew (August 24th) died as a martyr when he was skinned alive. The procedure resulted in the pious man's symbols in church paintings being a large knife and his own skin (Harva 1935, 14; Braun 1964, 118–119). Only two of the medieval Finnish churches (Pertteli, Laitila) were dedicated to St Bartholomew. Murals depicting him can additionally be found in the cathedrals of Hattula, Lohja (with his skin as his attribute; 1646, 1708) and Turku, where his attribute is a skinning knife, and in Rymättylä, Sauvo (1757) and Kumlinge, where his attribute is again the skin. In the painting in the Pyhtää church, the saint does not have a symbol at all. As mentioned, in Turku cathedral, a bear skin had been placed on the altar of St George in the 1400s, although there was also the altar of St Bartholomew. Perhaps this reflected the reciprocal precedence of the altars. Bird hunting started at the earliest on Perttu's (= Bartholomew's) Day, but the hunting of furred animals did not usually start until Simo's Day (October 14th). Overall, the beginning of the hunting season varied within a four-week-period, according to the climatic and geographical circumstances of Finland (Vilkuna 1969, 237–241).

St Anna (September 9th and December 15th), *Annikki* in Finnish, the mother of the Virgin Mary, was – according to folk beliefs – also the matron of the forest and Tapio's (the patron of the woods) maid, and the beasts were believed to be her dogs. Thus she was the female counterpart to St George. The Greek Orthodox people of the Setumaa region in Estonia asked Anna to protect the livestock grazing on the forest fields, because in the eastern church Anna's Day is on September 9th. In western countries, Anna's Day is not until December 15th, when the livestock is already inside, out of the reach of the beasts (Krohn 1914, 203; Vilkuna 1968, 277–283).

St Michael (September 29th), *Mikko* in Finnish, became the lord of the beasts as the third saint along with St George and St Margaret, who had defeated their dragons. He was the counterpart to St George, since on his commemoration day the summer herding of the livestock that had begun on St George's Day ended. He was believed to open the mouths of the wolves that St George (*Jyrki*) had closed in the spring (Krohn 1914, 19l). The ecclesiastical St Michael's celebration happened to be close to the old autumnal concluding celebration of harvest time, and that was why it quickly became rooted in the annual celebration traditions. The herdsmen returning from the pastures with the livestock on St Michael's Eve hooted their horns when arriving in the village, guiding the lead cow, which was equipped with a garland and a cowbell. Also, horses were taken to the courtyard from the outer pastures (Vilkuna 1969, 255–260).

St Birgitta's Day (October 7th) started the inside feeding season for the livestock in some places. According to a medieval legend, the bear was believed to have been born as a result of Birgitta's incompetence – from wool she had thrown into water. The saint thus occupied the place of Hongotar (see Piludu, this volume) who, based on folk belief, was the bear's new ruler and controller. She got her power from the fact that people used to put the skull of the bear on an old pine, Finnish *honka*. Hongotar is a feminine form of the "owner" of this tree (Vilkuna 1969, 267–168; Haavio 1967, 461–462, 464).

St Martin (November 11th) was known among the Swedish-speaking population of Finland as the protector of livestock, along with St Michael. In other parts of Finland, this saint, who lived in the 300s, appeared merely as the protector of horses. He had belonged to the cavalry when he was young, and later converted Franks as bishop of Tours (Krohn 1914, 191; Vilkuna 1969, 293–294).

St Catherine (November 25th) lived in Alexandria in the early 300s. People first tried to torture her to death on a dismembering wheel, which, however, broke due to the power of her prayers. When the maiden was then beheaded with a sword, milk instead of blood burst from her veins. A breaking wheel and an open book were the martyr's attributes, the first of which the people understood as a spinning wheel and the other as the beaters used in carding wool. Catherine thus became the protector of livestock, especially sheep, both in the cowshed and in forest fields (Vilkuna 1969, 298–302).

In continental Europe, *St Nicholas* (December 6th) was believed to make the bear docile and to give it full latitude only on the first three days of September (Fuchs 1924, 250–252).

The most important days of letting out livestock among the old commemoration days were St George's Day (April 23rd, or May 5th, according to the Julian calendar), in eastern Finland and Ingria, and Vappu Day (May 1st), i.e. Sofia's Day in the orthodox calendar, and the Day of the Cross (May 3rd) in the Häme region and partly in the Savo region in the sphere of influence of the old church of the Holy Cross in Hattula. The aforementioned dates were too early in most of Finland and, often, everywhere else as well. The ground was still frozen in some places and the snow had not melted in the shadows of the forest, so the cows could not live on the scarce food outside. When choosing the release day, people also took into account the phase of the moon, the winds and the weekday. So, often corresponding weekdays a week or two later were chosen, provided that they were suitable with respect to other signs.

Eric's Day (May 18th) was already the favoured release day of the livestock in parts of Scandinavia and in the Swedish regions in Finland in the 1700s. Later special days of release were the third and fourth Pentecost days, possibly because they were put into use only after the ecclesiastical nature of these holidays had been removed in 1772. Other dates were the days named after Caroline (May 20th), Urban (May 25th), Wilhelmina (May 28th), Nicodemus (June 1st) and Gustav (June 6th), all of which tell us about either how far to the north these places were located, or, vice versa, intensified inside feeding of the livestock in more recent times, when feed stocks were larger in number and the cows already milked nearly throughout the winter.

The overview of the legends of the saints presented above and the folk beliefs deriving from them show that special days related to beasts and the protection of cattle or the beginning of the hunting season can be observed a few months apart throughout the year. A great many of these days associate the bear with livestock, whereas the connection between the commemoration days and bear hunting remains anecdotal. The explanation lies in the mostly agricultural economy that already prevailed in the Middle Ages and, above all else, in the saints with their legends, who – apart from St Birgitta and St Olaf – were borrowed from southern agricultural countries. Nevertheless, it is useless to speculate about the connection between the donation day of a bear skin and the possible commemoration day of a saint close to it, unless there is a more definite reference to it in the written heritage, such as, for example, the skin being placed on the altar of St George in Turku Cathedral.

The whole village negotiated when the livestock should be let out into the fields. It was a celebrated moment, visible also in the foods and the merrymaking. In Karelia, the matrons prayed when letting the livestock out in the field again for the first time (Salminen 1914, 2):

> Old bearded man of the forest,
> the golden king of the hill,
> please make up with us,
> let's make summer peace,
> this summer of Jesus
> the great summer of God.

My bruin, my bird,
leave the robust bulls
and mucky cows alone.

When you hear the cowbell,
put your head in the turf,
stick a nail in your fur,
so your teeth won't break,
nor your jaws crack.

Virgin Mary
dear merciful mother,
come here if we need you
to protect my gleam,
in the summery lanes.

Like you did in the courtyard,
so do in the livestock pastures.

It is a prayer of the person who lets out the livestock (Salminen 1914, 7–8; Haavio 1967, 17), as is the following poem, written down among the Forest Finns of Värmland (SKVR VII, 5, 332):

George tie up your dogs
with iron chains
with golden chains.
Close your mouth,
gag your mouth.
Hide your nails in the fur,
your teeth in your gums.

The title says the poem was read to protect the livestock from the bear, not the wolf, as is usually the case with St George (Kirchberger 1970). When the transition from hunter-gatherer economy to agriculture began, animal husbandry also became more common, for which, among others, glades created by slash-and-burn clearance were excellent pastures. This procedure was observed in the Battle Axe culture and the Kiukainen culture in Finland (Huurre 1979, 74–77, 87, 99; Siiriäinen 1982) – despite the fact that no domestic animal bones predating the Bronze Age have been found –, which is exactly when a strong increase in the making of bear-headed axes can be seen (Carpelan 1974; 1977). The provision of manure was necessary to settled agriculture; manure was an important product of animal husbandry along with meat, hides and milk. When the livestock population increased, people had to pay even more attention to securing its safety. The significance of the bear as a quarry was emphasised. The securing of the livestock now became an essential task. Bear-headed weapons emerged beside elk-headed ones, among other ancient weapons, but they did not end up in rock paintings, due to the individual nature of the hunting (Taavitsainen 1978, 180, 184).

Instead, old rite conventions – i.e. bear killing celebrations – retained features that derived from the hunter-gatherer period when the brown one was a taboo, the creator, or the son of God in heaven etc., but new ideas intertwined in now, and the bear became the enemy of the livestock. As I see it, the development did not end here, since after the bear population had been reduced in certain areas to occasional individuals, or they had retained their taboos and so were no good as quarries, sacrificial

practices shifted to domestic animals. An anticipatory protection magic was created in which the skins of possible domestic quarries of the bear were sacrificed in the sacred groves, or to the church, and feasts were held where their meat was eaten. Such animals were the ox, sheep and reindeer (Korhonen 1999, 125–135; cf. Sarmela 1996, 48–51).

Conclusion

The essential question is how people managed to pass the bear skin off as a church offering instead of a feast artefact. When we mark on the map (Korhonen 1982, 46, 65) the area where the hunt bailiff institution had become established before 1640 – that is, before the skin was assigned to be the compensation of the hunt master – we can notice it covers exactly the regions where we know people donated skins to the church. The most remarkable difference seems to be in the Satakunta region. But this is just an ostensible contradiction, because, although we do not have many facts about skins in churches in this area, the aforementioned complaint of the peasantry of the upper Satakunta region, addressed to the King, proves the custom was commonly also known there. The statutory beast hunting, which had its roots in medieval times and had been revived again in the early 1600s, led by hunt bailiffs, brought bear skins to Finnish churches. Since it was a legal activity, its results, i.e. the fate of the bear skin, could be decided by the authorities. Although legislation does not have instructions on this, it would feel natural to donate the skin to the church on the recommendation of the authorities. Thus, this pagan ritual object could also be assimilated into the ceremonies of the new religion. It is revealing, however, that the skin was simultaneously moved into a subordinate position both symbolically and specificly, relocating it from the pagan "altar", the feast table, to under the feet of the representative of the more powerful religion, the priest.

In the end, the church was indifferent as to which saint's name the peasantry wanted to associate with the skins to protect their livestock. Although such a skin undoubtedly had great significance as a thermal insulation under the priest's feet (Hammarstedt 1920, 115; Oja 1938, 29) in the cold churches of the past – especially since the ecclesiastical proceedings included more kneeling prayers than nowadays – it seems indisputable that this aspect was originally not the only reason for acquiring the skins. Apparently, though, it was this reason that was emphasised later, when the church did not want to stress the sacrificial nature of the skins.

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RR: Registratuurajäljennökset

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Bears in churches: Skins, paws, and claws from Norway

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Keywords: Norway, church history, bear, amulet, local tradition

Abstract: In medieval Norwegian churches, bear skins were often placed in front of the altar, whereas bear paws and claws have been found beneath church floors. Remarkably, in a number of cases, such bear remains still exist, and modern scientific analyses of these materials have led to sometimes surprising insights into their age and origin. Skins, paws, and claws were used in ecclesiastical contexts, the former as foot-warmers for priests, who stood in front of the altar, and the latter as amulets, which were hidden beneath church floors in the belief that they would recharge their power, but were never recovered. In neither case are there any ascertained pieces of evidence that the use of bear remains went back to older, prehistoric traditions.

Introduction

The present author has lived in the inner east-Norwegian district of Valdres (Innlandet) for decades; in this district, a bear skin is still preserved in Hedalen stave church (dated 1163), a bear paw is exhibited in the medieval Ulnes stone church (dated 1265), and a claw was found during excavations in the ruins of the medieval Mo church (*c.* 1215). These finds were the point of departure for an analysis of the number and meaning of bear skins, paws, and claws in Norwegian churches (Fig. 1; cf. Jahnsen 2012). The gathering of data has taken many years, and modern scientific analyses of preserved organic materials will provide additional, and sometimes surprising, information.

All in all, bear skins have been recorded for 23 Norwegian churches, of which five skins, quite remarkably, still exist (Fig. 2; cf. Jahnsen 2012; see also Nodermann 2009, 156–157). In turn, bear paws (one still preserved) and claws are less numerous, being recorded for eleven churches. Most of the available information concerns the bear skins, which is why they are the focus of this article, followed by the paws and claws. In contrast, three figures from the outside of eastern Norwegian churches, the interpretation of which as bears is not compelling, will be omitted. Finally, when it comes to the church bears of Finland, Sweden, and Iceland, these will be only briefly mentioned (see further below; cf. Korhonen, this volume, on Finland).

On the age and origin of bear skins in churches

All in all, there is knowledge of bear skins from 23 Norwegian churches. These finds are mainly distributed in eastern and southwestern/western Norway, whereas they are less numerous in the middle and northern part of the country and, surprisingly, entirely absent in the south. In five cases,

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 795–810 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134363

the skins still exist, with no less than four from eastern Norway, and a fifth that is from the very northern edge of middle Norway.

Recently, and remarkably, scientific analysis of carbon isotopes in the preserved organic materials has been carried out for all surviving bear skins (plus the surviving paw from Ulnes; see below). ^{14}C-dating will allow a chronological allocation of the given object (Jahnsen 2012, 86), whereas ^{13}C-analysis may point to a particular area of origin, based on the composition of the diet of the animal in question.

The bear skin from the Hedalen stave church in inner eastern Norway (Innlandet, erected in 1163), has been radiocarbon-dated to the time span of 1290–1370; this is worth mentioning since the local legend (see below) relates to a bear shot after the Black Death in the church (Figs. 3–4). The skin from Viker church in Ringerike (Viken), likewise in inner eastern Norway, is dated to the period of 1310–1405, so it is more or less the same age as the one from Hedalen. There is a local tradition that this skin used to be a part of the one from Hedalen, but ^{13}C-analysis could neither verify nor negate this (personal communication with F. A. Grøndahl, Lands Museum, Dokka, November 2011). The remaining ^{14}C-datings for the skins from Kvikne (Innlandet), Nissedal (Vestfold og Telemark), and Gløshaug (Trøndelag) relate to rather modern finds, post-1500, and in cases like these the chronological allocation by radiocarbon dating is not that reliable (Jahnsen 2012, 86).

Apart from the aforementioned five bear skins, which still exist in Norwegian churches, there is a considerable number of such skins, a little less than 20, that are only known from written sources (in the following after Jahnsen 2012). Dating back to the period from the late 13th to the mid-16th centuries, there are several records. These start with the will, around 1280, of a certain Arnbjørn from Hebnes, a wealthy man from southwestern Norway, who gave skins to three churches in the area in which he lived: St. Olav's church in Stavanger, the Utstein monastery church, and the Jelsa church (cf. Jahnsen 2012, 26). The records continue with inventory lists from the early 14th century, which mention bear skins in Hålandsdalen (Holdhus) church and Ylmheim (Ølmheim) church, both in Vestland. Also, inventory lists from the early 18th century testify to bear skins in churches in Årdal (Rogaland), Røldal (Vestland), and Hen (Møre and Romsdal). Furthermore, there is a traveller's account left by an Italian, Pietro Querini, one of the Venetians who was shipwrecked in northern Norway in 1432; he saw a bear skin in St. Olav's church in Trondheim, middle Norway (Storm 1890/1891; Helland 1900).

One may expect a high degree of credibility for the above-mentioned cases, owing to the very nature of the sources. The situation is quite different for the following legends. There are two different kinds of "wandering legends" with a link to bear skins in churches. In the first case, the narration pretends to provide a long look back at bears and churches in the period after the Black Death, whereas the other one refers to rather recent dispatchings of "killer bears". Neither of the two will be analysed in detail; it will suffice to concentrate on the information provided about the origin of the bear skins.

The legend about Hedalen stave church in Valdres, eastern Norway, written down in 1743, reads like this: After the big plague, the Black Death, in 1349–1350, the Hedalen valley was deserted and was like this for a long time. The forest grew over the many deserted farms and the church. Long after this, a hunter came walking through the forest. He shot an arrow at a bird on a tree top, but missed. The arrow continued and hit something that gave a fine sound. The hunter ran for the sound and found a stave church in the middle of the forest. The arrow had hit the church bell. The hunter believed this was the church of the underground people, and threw his fire iron over the church to protect himself. (To throw steel over the underground people was well-known advice against witchcraft.) The hunter entered the church, where he found a roaring bear with its lair in front of the altar. This time the hunter did not miss, but shot the bear. He skinned the bear, and the bear skin was put up on the wall where it is still hanging (Landt 1951, 335; Jahnsen 2002, 190–194).

There are different variants of this legend about Hedalen, and in one of these, remarkably, the bear skin first came to lie in front of the altar, before it was later moved to a storage building near the church (Jahnsen 2012, 13). This legend is also associated with a few other churches in Norway (Hemsedal, Tuft, Heddal, all in eastern Norway), possibly in the form of a "wandering legend", written down (much) later, as was the case with Hedalen. Repeatedly, lively bears are described with their lair at the altar, whereas, after their killing, their skins were hung on inner church walls rather than placed in front of the altar (Jahnsen 2012).

In fact, there is a second and more numerous type of legend attached to bear skins in Norwegian churches; that of "killer bears" – ruthless killers of humans and animals –, which were finally dispatched by hunters in rather recent times. The narration may be considered a "wandering legend", too. The lengthy Nissedal legend was printed for the first time by M. B. Landstad in the 1880s (see reprint: Landstad 2002, 210; cf. also Åsen 1986, 437–439; Jahnsen 2012, 23–25). One variation has to do with the belief in a human in a bear's cloth/skin. Folk did not dare to name that bear in the correct manner. In contrast, the bear was given the name of a man. Another variation sees in the largest bears bewitched sons of kings, and yet another one has the bear killed by means of a silver bullet shot by an elder, weak man. Finally, it is worth mentioning that, in the case of the Sollia church in eastern Norwegian Hedmark, the legend about a killer bear was written down by none other than the Nobel laureate in literature, Sigrid Undset (*Lykkelige Dager*, Undset 1947, 179–180; *Happy Times in Norway*, Undset 1942), but elsewise there is no trace of that skin. Remarkably, in a number of churches linked with "killer bears", the skins of the animals were placed in front of the altar (for example Høle, southwestern Norway, and Saltdal, northern Norway).

On the interpretation of bear skins from churches

As has already been mentioned to some extent, there is an old connection between churches and bear skins in Norway. For around 1280, it is recorded in a testament that one bear skin was supposed to be given to St. Olav's church in Stavanger, or, more precisely, St. Mary's altar. Much later, three inventory lists from the early 18th century testify to bear skins placed in front of altars. This position is also indicated, to some extent, in the "wandering legends" about bears and churches in the time after the Black Death and the rather recent dispatchings of "killer bears".

Of particular interest in this regard are traveller's accounts. In the early 15th century, the aforementioned Italian Pietro Querini saw a white bear skin, 14½ feet long (thus originating from more than just one bear), on the floor in front of the archbishop's chair in St. Olav's church in Trondheim (Storm 1890/1891; Helland 1900). According to Pierini, the reason why skins served as floor rugs was the intense cold in Norway. The second record goes back to the well-known Swedish archbishop, Olaus Magnus, who visited Nidaros cathedral in Trondheim in 1518/1519 (Kolsrud 1914, 60). In 1555, in his *Historia de gentibus septentrionalibus* (The History of the Nordic People), he wrote that hunters used to give, after a promise they had made, white bear skins to the main altars in cathedrals or other churches, so that the priest should not have freezing feet in the terrible cold when officiating the service (Olaus Magnus 1555, Book 4, chapter 15; Book 16, chapter 20; Book 18, chapter 24).

It is recorded in only one instance (Ullensvang church in western Norway; cf. Jahnsen 2012, 28) that the act of skin-giving to the church as performed by a hunter was preceded by the prayer of a priest who asked for good luck in hunting. This kind of donation after the dispatching of the animal, with the skin placed in front of the altar or, in Trondheim, placed before the Archbishop's seat in the cathedral, may be assumed as the background for the early mentions of bear skins and for both types of the aforementioned considerably younger legends. In these, sometimes other skin use is described, but this may reflect variations, when the original use of skins had already been forgotten.

On skins in Norwegian churches: Polar bears vs. brown bears

The repeated mentions of polar bears in the early records of Norwegian church bears is striking (see above). They are mentioned in connection with the church at Hålandsdalen (Holdhus) in western Norway (inventory list, early 14th century) and St. Olav's church in middle Norwegian Trondheim (traveller's account from the Italian Pietro Querini from 1432). Olaus Magnus mentions white bear skins, too, in the middle of the 16th century. Finally, there is scientific evidence for the paw from eastern Norwegian Ulnes, which is from a polar bear that lived either in the 9th or the early 10th century AD (!) (see below).

As a matter of fact, polar bears were native in Greenland, whereas they came to Iceland only rarely on pack ice, and in Norway they were entirely foreign. Thus, such skins had a particular value, since they were foreign goods and the outcome of a "heroic deed" – the killing of a bear – which demanded particular courage (Oehrl 2013). As one may assume, the skins came to Norway as trading goods rather than as skins of animals hunted by Norwegians in Greenland or, less likely, Iceland.

The important point is that without doubt the overall number of bear skins in Norwegian churches came from brown bear. As regards the provenance of bear skins, paws, and claws from the churches, there is a match between their area of origin and information in oral tradition and written sources as to the whereabouts of persons being wounded or killed by predators like bears and wolves during the last 400 years (Fig. 5; cf. Furseth 2005). Thus, human and bear had a "shared history" in the respective areas of Norway, which also points to the dispatching of native bears and the use of their remains in a local context. An exception from the rule are several islands along the western Norwegian coast, where bears were foreign, but bear parts are represented in churches (cf. Fig. 1; e.g. Kinn in western and Alstahaug in northern Norway).

On the age and origin of bear paws and claws in churches

About half of the eleven Norwegian churches with bear paws and claws are situated in the eastern part of the country, and the other ones in the area between the west and the north. The number of these objects is too small to allow any reliable comparison with the distribution pattern of the 23 bear skins from churches (see above), but nevertheless it is worth mentioning that two out of three paws come from the east (and possibly yet another one that, however, has not been properly recorded).

The paw from Ulnes church in inner eastern Norway holds a special position inasmuch as it has survived until today (Figs. 6–7). In ten other churches, bear paws and claws came to light beneath the floors: three paws, seven claws, and three animal claws for which no species allocation is given (Jahnsen 2012, 63). The latter may be from bears, as is the case in a number of churches, but only archaeozoological analysis could tell us so. One find spot has to be omitted from further consideration; five burnt claws found beneath Mære church in middle Norway most likely belong to a Migration period cremation burial (Jørgensen 2008, 31; cf. Mansrud, this volume, on the prevalence of bear claws in Migration period cremation graves in Norway).

In the case of the existing paw from Ulnes church (erected around 1265), the results of scientific analyses were remarkable. As it turns out, the paw belongs to the time span of AD 820–920, according to a ^{14}C-dating, which makes it 300–400 years older than the actual church from which it originates (Jahnsen 2012, 86). In addition, ^{13}C-analysis has shown that the Ulnes bear had a "marine diet", which consisted of salt water fish or animals, typical for a polar bear, but not a brown one (personal communication F. A. Grøndahl, Lands Museum, Dokka, November 2011; see also Jahnsen 2012, 64–65). Thus, in the given case, it is both an exotic animal and a particularly early one, with an unknown history before one of its paws was hidden beneath the choir of Ulnes church.

For any further analysis of bear paws and claws, it is essential to have at hand as much information as is possible from excavation documents about the find circumstances of the respective bear claws and paws; where exactly were the objects found, within the church (horizontally), but also beneath its floor (vertically)?

Any such attempt, however, faces the problem that beneath the floors there is often only mixed-up earth which originates, amongst other things, from medieval or later burials placed below the nave and to some extent even the choir (Magnussen 2007, 24). Thus, no reliable find context can be given for objects that came to light beneath church floors; they were not found in original, undisturbed layers and may thus be rather young or (much) older. In addition, it is only in recent church excavations, from the 1980s onwards, that all finds were kept – not just the coins, which had received the main attention so far (Magnussen 2007, 11).

The excavation in the east Norwegian Uvdal church in 1978 is worth a mention inasmuch as it sheds further light on bear claws (Fig. 8). Approximately 3,000 objects were uncovered beneath the church floor, among them *c.* 550 coins, but sadly a proper analysis of the finds from the animal realm seems to be missing (briefly: Christie 1992, 17; cf. also find no. C34866 of KHM/Kulturhistoriske museer, Oslo, Norway). All in all, eleven claw/skin remains were found, among which there are seven from the choir and four from the nave. Only four out of seven claws definitely originate from bears; there are three more without classification, and one that is questionable. Among the unspecified ones, there is one with undetermined skin remains (nave), one that has been drilled (nave), and possibly yet another one (choir). Since three skin remains, which remain unanalysed, carry related find numbers, they may all originate from the same area in the choir. As stated in a legend, a wolverine was shot in the church in the period after the Plague, not a bear, as is usually reported (Jahnsen 2012, 21–22). Today, a sheep skin lies on the church floor close to the altar (Fig. 9). Thus, Uvdal church yields very interesting materials, in both archaeological and written form, but there are quite a number of open issues. This also relates to the question of whether a paw was found beneath the floor in Uvdal church (affirmative: Christie 1992, 17, but with no such entry in the find catalog).

The western Norwegian church at Kaupanger and its excavation in the 1960s is an interesting example as regards bear paws (in the following according to Magnussen 2007, 55–56, 79). Among the *c.* 1,500 objects that came to light during excavations beneath the church floor, there were more than 1,400 coins, followed by 36 pieces of jewellery or clothing, plus other types of finds, which are represented only rarely, found mainly in the nave. Among the salvaged objects, there are three bear claws, one still attached to a paw, and one bird claw (grouse or domestic chicken). One bear claw was found beneath the church floor in the area of the eastern choir; the other bear remains and the bird claw are recorded for yet another area in the choir, to the east, but with no further details given. In the present case, with the choir, the holiest part of the church that is closed to ordinary churchgoers, as the area of origin and some of the bear remains and the bird claw probably recovered from the same spot, one may suspect an intentional deposition, in particular for the paw which cannot simply be considered as accidentally lost.

To sum up, the record of find circumstances in the churches and the identification of animal remains found therein is to some extent insufficient, but the latter could be improved by future analyses. Here, the unspecified claws from Uvdal (eastern), Moster (western) and Alstadhaug (northern Norway) would matter (Jahnsen 2012, 63). Bear claws were recovered in a total number of seven Norwegian churches in both choir and nave, whereas in the case of the paws, two originate from the choir (Ulnes, Kaupanger; possibly also Uvdal) and one from the nave (Lom). The paws and claws from choirs demand special attention; the objects were not simply lost, they were presumably placed ("offered") deliberately beneath floors in the part of the building restricted to clerics. For the claws in the nave, one cannot be as certain about the circumstances; there may have been cases of accidential loss. However, at any rate, these claws must have had some importance for their owners.

The bear claws are in need of closer analysis. During the aforementioned Uvdal church excavation, two claws (bear?) came to light that had been drilled, which suggests that they were worn on a string/chain. This, however, cannot be generalised, since Uvdal is the only church, among seven with identified claws, where such drilled claws occur. Interestingly, the use of undrilled claws is revealed by the 10th-century female grave IV in Rösta, Ås parish, Jämtland, in northern Sweden; here, two claws were found in a bag, placed by the waist of the buried person (see Jordahl et al., this volume). Since bags of organic material are likely to decompose, they will usually defy identification in archaeological materials. However, and quite remarkably, Norwegian churches have yielded organic bags in some numbers. These bags, sometimes called *pjoterposer*, allegedly contained small objects that were believed to possess magic powers (Bø 1978, 191; Christie 1992, 21). When opened, however, such bags did not produce any objects such as, for example, bear claws, but only specks of dust (Magnussen 2007, 57).

As has been suggested, claws and paws hidden beneath the church floor, on holy ground, were believed to "recharge" their power as amulets, in the belief that the remains (claws) of wild animals (be they bears or birds) brought with them particular strength (Christie 1992, 17). If one follows this idea, the objects found during excavations – in particular those from choirs – might have been placed beneath the church floor with the idea of future recovery which did not happen.

Owing to the special physical quality ascribed to the bear, its remains, such as teeth, claws, paws, and skin, had a special role in folk medicine for healing, regeneration, fertilising and strengthening (see Böldl and Mansrud, this volume). For example, a tooth could help against toothache, or would provide protection for the hunter. Regarding the use of bear paws, there is a remarkable record for western Norway. Two bear paws, kept in Sogn Folkemuseum, were once sent from farm to farm and are said to have had a curative effect against pain and suffering for persons and animals (Fig. 10; cf. Jahnsen 2012, 66–68). In the case of difficult births, such a paw was carried beneath the clothing or moved over the stomach and genitalia of a pregnant woman. In Veitastrond, this still happened until after 1900 (note from Aud Ross Solberg, Sogn Folkemuseum, March 30th 2006).

Final remarks

There is a considerable number of bear skins, paws, and claws associated with medieval Norwegian churches. As demonstrated, it is only the bear skins for which there is sufficient archaeological and written records, whereas for the paws and claws the find records are often imprecise or a species identification of the skins and claws is missing. In turn, the question of bear figures has been omitted from the paper, since their interpretation is not compelling (see Fig. 11 for the cases in question).

Broader analyses would be needed. What do we know about the representation of other animals in Norwegian churches? In this respect, the aforementioned Uvdal church provides an interesting case; once, it allegedly housed a wolverine hide, but, in more recent times, this has been replaced by a sheep skin. And what do we know about church bears in the north of Europe but outside Norway? To mention this only briefly, Norway is special owing to the paws and claws found in churches, since elsewise only skins have been recorded (in *c.* 50 Swedish, *c.* 20 Finnish, and likewise *c.* 20 Icelandic churches; see Jahnsen 2012, 59–61; cf. Nodermann 2009, 152–157). Furthermore, it is mostly Norway that yields comparatively early mentions of bear skins with details about their origin, placement in the church, and use (late 13th to mid-16th centuries).

What role did bears have in (late) pre-Christian times, and up to what extent did this influence the use of bear skins, paws, and claws in churches? According to written accounts, both scaldic poetry

and sagas, bears had no prominent position among the animals in Old Norse religion, except for the so-called berserks, members of warrior bands who wrapped themselves in bear or wolf skins (see Lombardi, Ney and Sundquist, this volume). Somewhat contradictorily, Frösö in Jämtland, northern Sweden, has yielded a late pre-Christian offering site beneath the choir of the local stone church with a considerable amount of bear remains close to a tree stump (see Magnell, this volume). This may reflect that bears were hunted quite often in the area in question and some parts were offered, possibly following some sort of "bear ceremonial", which was meant to show respect towards the hunted species and in particular the mighty and powerful bear. In a way, the Frösö offerings of bear remains and the bear skins donated to Norwegian churches may be considered in a similar vein; as the thanksgiving of hunters for the luck they had in dispatching such an animal.

To return to bear paws and claws; according to folk religion (medicine), they would bring about help against pain or suffering by animals and humans or difficult childbirth. Particular emphasis should be placed on paws and claws from the choir. Quite possibly, there was the belief that, while they were in place beneath the church floor, paws and claws would "recharge" their power as amulets, but they were then not recovered by their owners. This kind of amulet use may have been rooted in a Christian setting. It does not necessarily lead back to older times, though this cannot be ruled out.

When it comes to bear skins, their use as floor rugs for priests is recorded for the first time around the middle of the 15th century, and from then onwards quite regularly. Here, one may pose the question of whether this was the original or only a secondary use, and, if it was original, was there any symbolic meaning attached to it, that went further back in time? In this context, it is worth mentioning that, according to the regulations of the nunnery of Vadstena in Sweden, the nuns were not supposed to use feathers for (stuffing of) bedclothes but bear skins (Nodermann 2009, 145). Also, Holy Birgitta is said to have rested upon a bear skin (ibid.) In contrast, there is no proof that the nuns of Gudhems kloster in Swedish Västergotland, as has been suggested, were laid in their graves on bear skins (personal communication Maria Vretemark, Västergötlands museum). With this knowledge, based on Swedish sources, the bear skins that served as floor rugs for warming the feet of the priest during the church service would be yet another facet of the practical use of the skins, here in ecclesiastical contexts, with no ascertained connection to any special importance ascribed to bear skins in pre-Christian times.

Finally, Olaus Magnus has pointed out a special use, not for bear but wolverine hides. In "How to honour guests with coverlets of wolverine hides", he tells us that such hides were not trading goods, but were kept as bedding for important guests (Olaus Magnus 1555, chapter 8; cf. Sigvallius 1994, 76). This immediately brings to mind the aforementioned church from east Norwegian Uvdal, which has not only yielded bear skin remains and bear claws, but also a legend, according to which a wolverine was shot in the church in the period after the Plague; a variant of the "wandering legend" about the church and the bear (Jahnsen 2012, 21–22). Today, a sheep skin lies on the church floor close to the altar, possibly in the same position as the wolverine hide before. If one is to follow Olaus Magnus, wolverine hides saw a secular use, whereas bear skins, paws, and claws are found embedded in an eccleasiastical context.

Acknowledgement

The author would like to thank Oliver Grimm for his help in editing the text.

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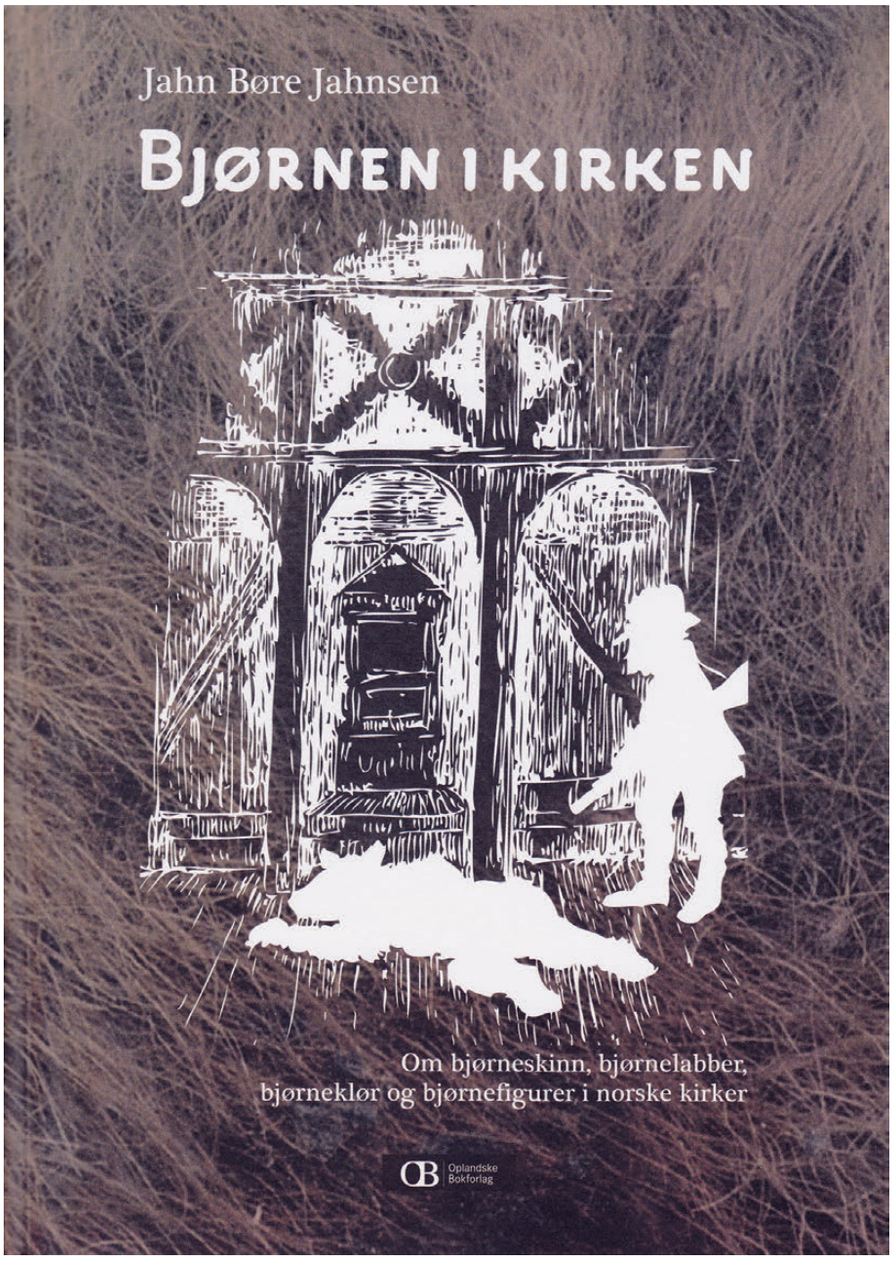


Fig. 1. The author's book on bear remains in Norwegian churches (cover drawing G. Helgen).

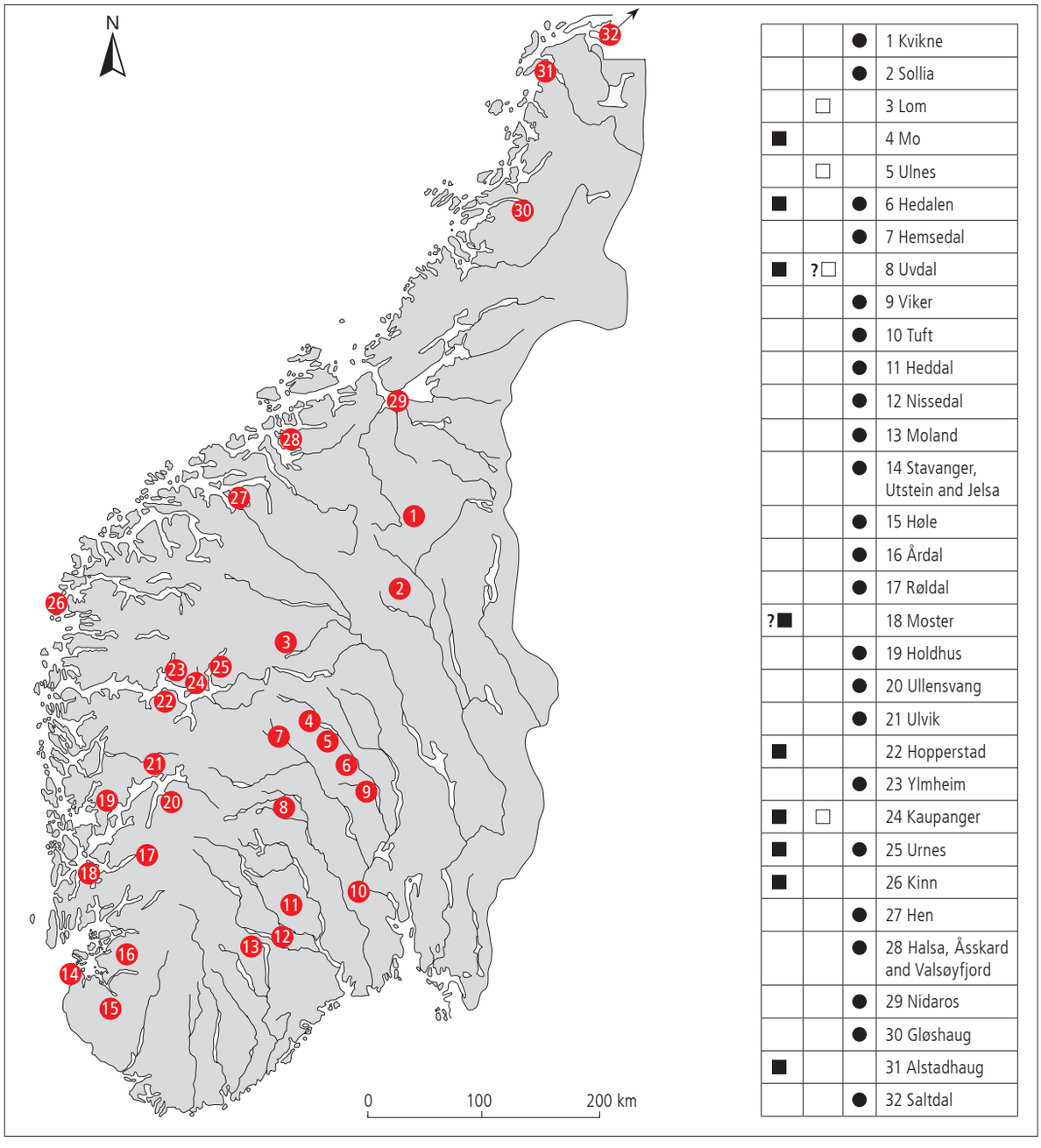


Fig. 2. Distribution of bear skins, paws and claws in medieval Norwegian churches. Circle: bear skin, open square: bear paw, full square: bear claw (map M. Bolte, ZBSA, after a draft by J. B. Jahnsen).



Fig. 3. Stave church in Hedalen, Valdres (Innlandet), in eastern Norway. Built in 1163 and rebuilt in 1699 (photo J. B. Jahnsen).



Fig. 4. Premodern bear skin from the medieval stave church in Hedalen, Valdres (Innlandet), in eastern Norway (photo J. B. Jahnsen).

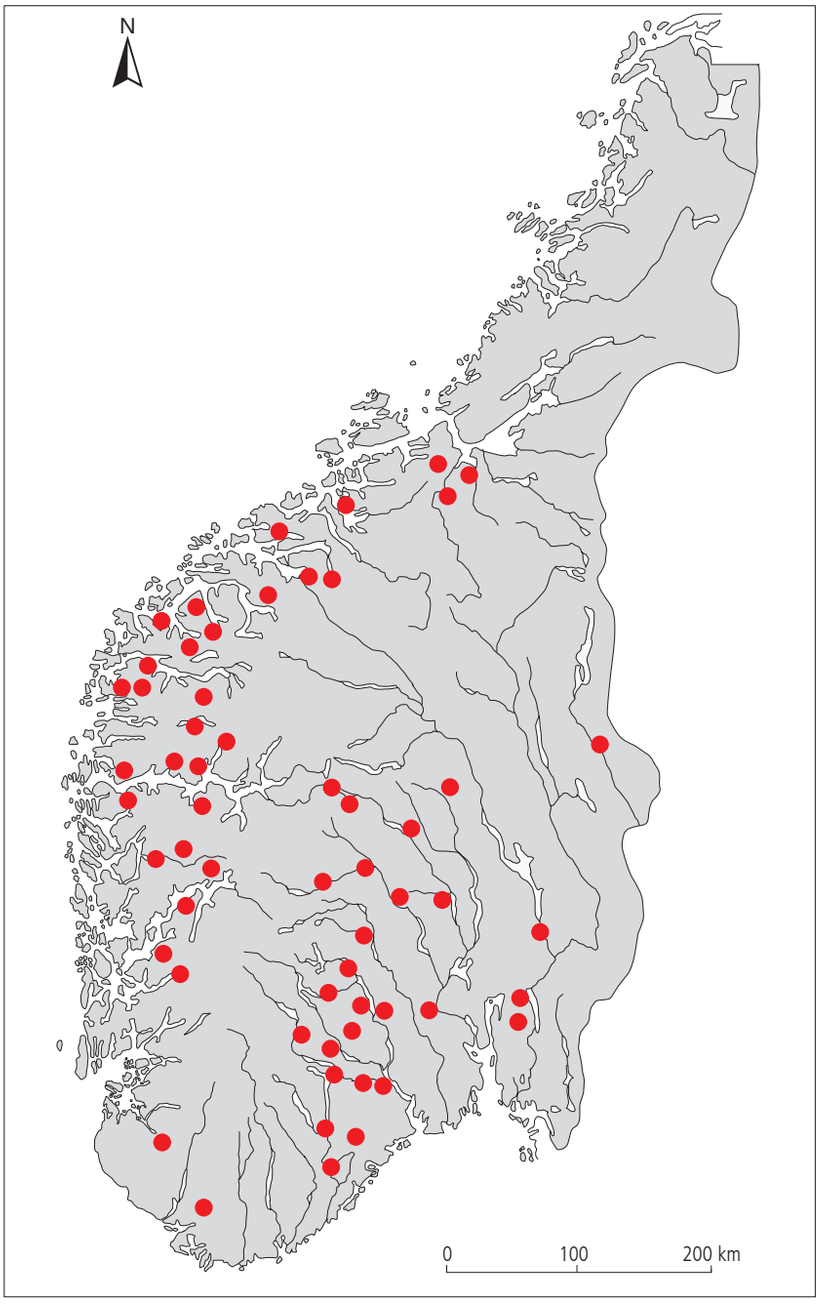


Fig. 5. Killed by bear. Norwegian incidences in the past 400 years, with northern Norway excluded (map M. Bolte, ZBSA, after Furseth *2005, 26).*



Fig. 6. Stone church in Ulnes, Valdres (Innlandet), in eastern Norway. Built c. 1265 (photo J. B. Jahnsen).



Fig. 7. Premodern bear paw from the medieval stone church in Ulnes, Valdres (Innlandet), in eastern Norway (photo J. B. Jahnsen).



Fig. 8. Stave church in Uvdal, Numedal (Viken), in eastern Norway (photo J. B. Jahnsen).



Fig. 9. Sheep skin in front of the altar in the medieval stave church in Uvdal, Numedal (Viken), in eastern Norway (photo J. B. Jahnsen).



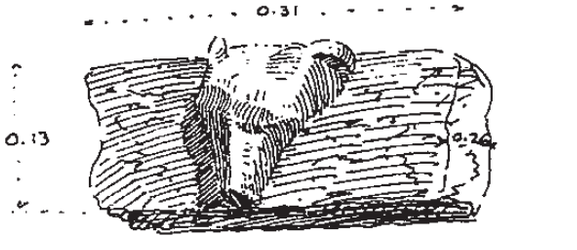
Fig. 10. Bear paws from western Norway, once used in the case of disease or birth (photos Sogn Folkemuseum).



A



B



BUESTEN. FUNDET UNDER TER-
RÆNET I SAIBOTS NORDØSTRE HJØRNE

C

Fig. 11. Disputable bear figures from eastern Norwegian medieval churches. a: Heddal stave church (Vestfold and Telemark, after Bugge *1954, 37; photo B. Mogan Lindheim); b: Hoff stone church, Toten (Innlandet; after* Gihle *1978, 55);* c: *Bamble (Vestfold and Telemark, after* Pettersen *1914, 169).*

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Edited by Oliver Grimm,
in cooperation with Daniel Groß, Alexandra Pesch, Olof Sundqvist, and Andreas Zedrosser

A volume based on papers presented at a conference at Orsa Predator Park, Dalarna, Sweden, Oct. 16th to 18th, 2019

Volume 3.3

BREPOLS

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library.

Copy editor: Gundula Lidke

Layout, typesetting, and image editing: Matthias Bolte and Cornelia Lux-Kannenberg. Cover design by TopicA.

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D/2023/0095/164
ISBN: 978-2-503-60611-8 (3 vols)
e-ISBN: 978-2-503-60613-2 (3 vols)
Volume DOI: 10.1484.M.TANE-EB.5.134321
Three-volume set : DOI: 10.1484/M.TANE-EB.5.133678

Printed in the EU on acid-free paper.

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The bear that illustrates H. Falk's instructions (H. Falk, Underrättelser om björnskall, *Stockholm 1828, here the title page) on how to kill such an animal looks weary and suspicious, rather than aggressive and bold. Surprisingly, Falk, a hunter in the period when a state bear extermination policy was in force, expresses how the majestic bear evokes fear and awe and hopes for its survival (see* Dirke, *this volume).*

Bears, kennings and skaldic poetry

By Maria Cristina Lombardi

Keywords: Skaldic poetry, kenning, bear

Abstract: "Metamorphosis and identity are the two limits of human existence, incompatible with one another, but complementary in that human life exists in a movement between these two limits" (Lichtensteins 1963). This is particularly true in the poetic language, where the use of metaphors makes crossing between the two possible and easy. In skaldic poetry the close connection among different domains (animal, human, material) and the ontological border instability between them is so relevant that it has originated in a vast and rich amount of literary and linguistic expressions through which contacts and interlacements have led to transformations and metamorphosis. Skaldic kennings (rethorical tropes which are notably creative and frequent in this genre) are far more numerous and complex than those in Eddic lays. Skalds, Viking court poets who composed their texts for the drótt *(the king and his followers), had to show their skills and inventiveness through a massive use of these complicated linguistic ornaments, which they embedded in quite short texts where metaphors based on animals often occurred. In my paper I will investigate some skaldic stanzas with kennings containing animal metaphors, and then I will discuss those presenting* heiti *for "bear" mentioned in the* Þúlur *– lists of poetic terms at the end of* Skáldskaparmál *in Snorri's Edda – where under the name "bear" we find epithets and periphrases to be used as alternatives to the common substantive "bear", by this way satisfying the quest of synonyms typical of Old Norse skaldic verse. My hypothesis is that Scandinavian poetry – with its mythological lore essentially based on war and battle – contains kennings with animals traditionally connected with the battlefield (wolves, eagles, ravens, etc.) rather than with bears; the latter animals being associated with hunting and belonging to non-Germanic traditions.*

"Metamorphosis and identity are the two limits of human existence, incompatible with one another, but complementary in that human life exists in a movement between these two limits" (Lichtensteins 1963, 214). This is particularly true in the poetic language, where the massive use of metaphors makes crossing between the two possible and easy. This peculiarity of poetic language represents the real power of poetry; since ancient times poetry has been capable of creating new landscapes – phantastic realities, where creativity and artistic discourse have been expressed without hindrances.

The close connection among different domains (animal, human, material) and the ontological border instability between them are so relevant that they have originated in a vast and rich amount of literary and linguistic expressions through which contacts and interlacements have led to transformations and metamorphosis. The history of literature is full of animal metaphors which connect poetry to the animal world, and writing to game (Bleakley 2000, 26–27). Ovid's *Metamorphoses* represent perhaps the most famous example of this kind, narrating myths and legends already spread and known among Greeks and Romans. In Old Norse sagas *berserksgangr* can be compared to a

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 827–838 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134364

kind of metamorphosis; special warriors consecrated to Odin became sorts of bears in battle, transforming into bear-like beings in their ferocity, aggressivity, loosing humanity (see Sundquist, this volume). They usually preserved this evil nature even in their normal lives as some *Íslendingasǫgur* show (cf. *Eyrbyggja saga* 1957, chap. 25).

If we view Old Norse culture as more or less directly deriving from an Indo-European population which is supposed to have settled down in Scandinavia around the 2nd millennium BC (Hedeager 2004, 225–228; Jennbert 2004, 206–213), adapting to the ecology and in contact with other significant cultures, in such a context Odin's shamanic nature is particularly relevant especially with regard to bear traditions. Germanic cultures had taboos against uttering the bear's name, which led to the replacement of the Indo-European word for "bear" by noa words stemming from the colour brown (bear, bjǫrn, etc.; cf. Nedoma, this volume; Frog 2008, 12–13). We have an example of this in one of the oldest lays of the poetic Edda, *Vǫlundarkviða*, where "bear" is referred to directly as *brunni,* "the brown one", a noa word for "bear". Moreover, hunters with a freshly killed bear are a topic of folktales in northeastern Scandinavia, and stories about bear-men are spread in those areas: we have many "memorates" collected by Bengt af Klinterberg describing experiences of men transforming into bears and *vice versa* (e.g. *Lappen som gick björn* "The Sami who transformed into a bear", cf. Af Klinterberg 1986, 305–306). But it must be said that Old Norse sources and folktales are very late and therefore hardly reliable concerning ancient rituals and beliefs in general, and of course this also applies to those about bears.

Since the 12th century, written sources have been preserved from medieval Iceland, many of them in Old Norse language. Different works, both in prose and poetry, and various literary genres – such as sagas or the collection of heroic and mythologic stories called the poetic Edda – appeared and were copied in Scandinavia. As far as poetry is concerned, skaldic poems, a very peculiar genre presenting a quite sophisticated form, hosted special rhethorical devices which will be analysed here.

I will briefly mention an Icelandic saga which has been taken as an example of text preserving a bear ritual, *Hrólfs saga kraka*, as well as some stanzas in the poetic Edda. Then I will concentrate on skaldic poetry because skalds were absolutely innovative and revolutionary in linguistic inventiveness, through their exceptionally complicated kennings where personifications of natural elements – trees acting as warriors, ships and swords acting as animals (horses, serpents, bears) – constantly occur. By applying cognitive linguistic theory by George Lakoff and Mark Johnson (Lakoff/Johnson 2003) which studies the relationships between language and thought to skaldic poetry, we find recurring models expressing the perception and the conception of the world which concretise what Peter Gärdenfors maintains: if we want to suggest a particular quality (mobility, strength, power, etc.) of an object, for example a sword, a ship (i.e. rapidity, aggressivity, or strength), we can do that by using an adjective or, more effectively, through calling it directly by the name of a being (an animal) having these qualities (Gärdenfors 2000).

Among sagas, *Hrólfs saga kraka*, analysed by Schjødt (2003, 261–278) as a narrative based on initiation rites, has been taken as an example of initiation into the status of *berserkr* warriors. Unfortunately the saga is very late, and it is difficult to take for granted what such a late narrative sequence tells about initiation as if it would mirror old rituals (for example those relating women to bear rituals, always providing women with rings through which they must look at the ceremony).[1] The Scandinavian Germanic society had undergone many crucial changes since the pre-Christian period (into which the *berserkr* rites must presumably be placed). Moreover, there is no external evidence for such rites in Germanic communities while there is much for Sami rites.

1 Clive Tolley has recently treated the accounts of coupling between a bear-man and a woman in *Hrólfs saga kraka* and *Gesta Danorum* Book X, arguing for the transmission and adaptation of these narrative complexes from Sami traditions (Tolley 2007).

Similarly, according to Frog and other scholars, sources related to the Sami are quite recent, and it cannot be demonstrated with certainty that those rituals (as described in *Hrólfs saga kraka*) really existed in the past (Frog 2008, 1–50).

Nevertheless the Sami, although influenced from outside themselves – i.e. by the Scandinavians – preserved stories and practices connected to the bear (as the above quoted "memorates" collected by af Klinterberg show).[2] But *Hrólfs saga kraka* is a completely different type of source – it is Icelandic and thus very far from the areas which Sami culture had influenced (Norway, Sweden).

The poetic Edda presents almost exclusively negative images of bears as destroying and killing creatures; they appear as symbols of bad luck in Gunnar's premonitory speech, full of scary images, which he makes before leaving for Atli's kingdom in *Atlakviða,* 11 (one of the Sigurðr-cycle poems; cf. *Edda* 1962, 242; *Edda [transl.]* 1923, 486):

Ulfr mun ráða
arfi Niflunga,
gamlir, granverðir,
ef Gunnars missir,
birnir blacfiallir
bíta þreftǫnnom,
gamna greystóði,
ef Gunnarr né kømrað.

The wolves then shall rule / the wealth of the Niflungs,
wolves aged and grey-hued, / if Gunnar is lost,
and black-coated bears / with rending teeth bite,
and make glad the dogs, / if Gunnar returns not.

They appear also in Kostbera's dream about the terrible outcome of her husband's (Högni, Gunnar's brother) journey, when she tries to dissuade him from leaving, in *Atlamál* , 17 (*Edda* 1962, 250; *Edda [transl.]* 1923):

Bjǫrn hugða ec hér inn kominn, bryti up stocca,
hristi svá hramma, at vér hrædd yrðim;
munni oss mǫrg hefði, svá at vér mættim ecci;
þar var oc þrǫmmon þeygi svá lítil.

A bear saw I enter, / the pillars he broke,
and he brandished his claws / so that craven we were;
with his mouth seized he many, / and nought was our might,
and loud was the tumult, / not little it was.

Unlike skaldic poetry, which is a typical product of the Viking age, Eddic lays have their roots in old Germanic lore (Frog 2008, 6). *Vǫlundarkviða* ("The song of the marvellous craftsman Vǫlundr"), for instance, has correspondences in other Germanic traditions, i.e. in Anglo-Saxon elegies (the so-called *Deor's Lament* mentioning Weland, the Old English name of Vǫlundr) and the so-called Franks

2 The bear rites recorded from northern Siberia are remarkably homogeneous (ie. bear rites where the bear had become an object of cult, a totem animal for some tribes, their divine progenitor, among Ob Hungarians); see Honko et al. 1994, 120–135; Pentikäinen 2007, 45–47 ; see also Rydving, this volume.

Casket, an early 8th-century decorated ivory casket, partly preserved at the British Museum in London and partly at the Bargello Museum in Florence. Furthermore, *Vǫlundarkviða* shows some relationships with Sami culture.[3] It starts with a prose passage where three brothers (one of them is Vǫlundr), said to be the sons of the Finns' king, are described as skilful hunters. They marry three swan-maidens (who are in fact valkyries) who after seven years fly away from them. Vǫlundr's brothers leave in search for their wives, while Vǫlundr stays at home and waits for his wife, forging rings in order to attract her. Here the presence of rings (always appearing in traditional after-hunting rituals attended by women) forged for a woman is particularly interesting (*Edda* 1962, 118; *Edda [transl.]* 1923, 257):

Kom þar af veiði
veðreygr scyti,
Vǫlundr, líðandi
um langan veg.

Vǫlundr home
from his hunting came,
from a weary way,
the weather-wise bowman.

In stanzas 9 and 10 we learn that he sits on a bear skin while cooking bear steaks, at which point the animal is referred to directly as *brúnni,* "the brown one", the above mentioned noa word for "bear" (*Edda* 1962, 118; *Edda [transl.]* 1923, 258–259):

9.
Gecc brúnni
bero hold steikia, […].

A brown bear's flesh / would he roast with fire, […].

10.
Sat á berfialli,
bauga talði, […].

On the bear skin he rested, / and counted the rings […].

In stanza 17 Vǫlundr bares his teeth like an animal, and he is referred to as a *dyrr,* an "animal", when in captivity (*Edda* 1962, 119; *Edda [transl.]* 1923, 261):

17.
Ámun eru augu
ormi þeim inum frána,
tenn hánum teygjask.

The glow of his eyes / is like gleaming snakes,
His teeth he gnashes.

3 Hatto (1980, 327) shows that the folktale has sub-Arctic roots related to totemic ancestry.

Nevertheless we must say that these kinds of allusions to bear-myths are quite rare in Old Norse sources. Gods and myths of the Vikings have drawn attention away from ancient customs among Scandinavians, in particular those living in the northeastern area. From archaeological evidence (DuBois 2014, 47–48), we know that hunter-gathers, closely dependent on seasonal patterns, replicated their concern for survival in art and ritual (totemic figures, representing mythical ancestors for the clan or the community; cf. Zachrisson 2008, 32–39). In this regard Thomas DuBois observes that already then "the relative paucity of depictions of the bear – held as supernaturally powerful throughout ancient North Eurasia – may also indicate a totemic status of that animal, this time through taboos against representation" (DuBois 2014, 48). Generally also pronouncing the totemic entity's name was forbidden.

Coming to skaldic poetry, we must keep in mind that the first skaldic texts were composed orally and that they were written down only after the 12th century. The genre survived even after the end of the Viking age, until the 14th century, with a flourishing of Christian skaldic compositions. Skalds were particularly concerned with linguistic experiments; their kennings (very peculiar "half-metaphors") were highly creative and far more numerous and complex than those in Eddic lays.[4] Skalds were Viking court poets who composed their texts for the *drótt* (the king or jarl, and his followers). They usually described their king's or chieftain's warlike enterprises, but also their own love sufferings or other topics, and they had to show their skills and inventiveness through a massive use of kennings embedded in quite short texts (where kennings represented a relevant portion). Skalds elaborated endlessly on the form of their verses and the poetic components used for the battlefield, its protagonists and actions: texts were full of metaphors for "warrior", "sword", or "ship", many of which contained animal names.

Gaston Bachelard compares metamorphosis to metaphor, by arguing that the true "animalizing imagination" tends to deform metaphors towards metamorphosis (Bachelard 1965, 51). The passage of the animal into the language implies a double movement – that of the animal into the language (the animalisation of language) and that of the language into the animal, making the animal loose its nature and assume the value of a sign-symbol (ibid.).

However, kennings – even the metaphorical ones (which have a metaphor as a "Base word") – do not permit a complete metamorphosis, because they bind and limit metaphors to their referents by "Determinants" (in the genitive), always containing terms belonging to the Referent's habitat, as in *sævar bjǫrn* = "the bear" (Base word) "of the sea" (Determinant)" = the ship (Referent).

Here the ship is called *bjǫrn* "bear" (a metaphor), while the term in the genitive *sævar* "of the sea" connects the bear to the sea, thus suggesting the referent's domain and habitat. An element of the original domain is therefore preserved. Here an animal metaphor is used to indicate an unanimate object (ship), thus giving the object the aesthetic and intrinsic qualities of the animal; the bear (imposing build, strength, energy, violence) transforms the ship into a hybrid (a bear-ship being) – a strong and dangerous war-ship.

We have many variations of this kenning for "ship" (mentioning other animals); the ship may be called a "horse" (the horse of the sail), a metaphor indicating a speedy means of transport, while the

4 A kenning is a stylistic figure that speaks to knowledge and reason and involves word-play and logical relationships. The fact that kennings occur in other poetic corpora suggests that they are an inheritance from Germanic poetry. The skaldic kennings differ in two characteristic features from the older ones: in their variability, and in their building of complex clusters. A *heiti* "name, appellation, designation" is a synonym in place of the normal word for something. *Heiti* are distinguished from kennings in that a *heiti* is a simple word, whereas a kenning is a circumlocution in the form of a phrase or a compound word (cf. Marold 2012, lxxv–lxxxv).

term in the genitive "of the sail" (a metonym, since the sail is a part of the ship) connects the horse to the ship, thus revealing the Referent's domain.[5]

Other variations of this kenning may also contain synonyms both for "bear" and for "sea" (quoted in Snorri's *Edda* [*Skáldskaparmál*] , which I will soon analyse), i.e. *íugtanni hvalranns* "the greedy-toothed one" (an epithet for "bear") "of the whale-house" (a kenning for "the sea"), or *sævar vetrliði* "the winter-survivor of the sea".

DuBois (2014) claims that when an animal appears capable of signalling important events such as seasonal shifts – as we can infer from the kenning "winter survivor" for "bear", it probably indicates some kind of sacral relevance of it. Thus, calling the bear "winter survivor" in Viking poems points out the animal's hibernation and its awakening as a type of re-birth in spring. We might view the presence of epithets like this in Old Norse kennings as a precious piece of stratified knowledge belonging to old memories and traditions which had remained active in the Viking age, when they were combined with new deities and other rituals (ibid.).

The concentrated language usually characterising kennings makes it a difficult cognitive process for present day readers to decode them, but this was not the case for the original audience of skaldic poetry. They knew the complicated lists of synonymic names for the different referents, i.e. "the bear of the sail", or "the bear of the keel", both for "ship", or "the horse of the whale-house", also for "ship". The surprise effect was rather produced by how these were combined, their sound effects, and the alternation of the strong and weak accents in metrics. Personificated trees with spears and swords instead of bows and leaves (referring to warriors), and bears with keels and sails going on the sea instead of walking in the forest: such images of hybrids, strange creatures halfway between human and animal, or monsters (a kind of science fiction *ante litteram*) are suggested by kenning combination mechanisms.

But let's return to the bear. In my research on Viking poetry I have found that bear-mentions are few and generally not based on myths but rather on natural observation. So, how does the bear appear and act in skaldic kennings and *heiti*?

In this paper I will consider some kennings in a skaldic stanza (*lausavísa*) by Markús Skeggjason, a famous Icelandic skald who was also law-speaker in Iceland from 1084 until his death in 1107.[6] In Ari Þorgilsson's *Íslendingabók* (*Íslendingabók/Landnámabók* 1968), Markús is mentioned as an important informant for Ari about the lives of the earlier law-speakers in Iceland.

This *lausavísa*, quoted in Snorri's *Edda* (*Skáldskaparmál* 157) and in Óláfr Þórðarson's *Third Grammatical Treatise* (cf. Ólsen 1884, 76) presents several kennings, with synonyms for "bear" as metaphorical Base words.[7]

I will investigate and compare them with other kennings and *heiti* for "bear" mentioned in the (Younger) Edda, which was compiled and written down by Snorri Sturluson in the 1220s. In particular, I will analyse its part devoted to poetic diction, called *Skáldskaparmál*, and the *Þúlur*-lists of poetic terms. Here, under the name "bear", we find epithets and periphrases to be used as alternatives to the common substantive "bear", this way satisfying the quest of synonyms typical of Old Norse skaldic verse. They refer to the animal's physical appearance and to its behaviour, as shown in folklore and popular traditions, rather than to mythological stories.

5 Already in the 13th century, Óláfr Þórðarson's *Third Grammatical Treatise* describes and analyses kennings and poetic compounds; he explains that a ship can be paraphrased as "animal of the sea" and illustrates how metaphors move from an animate being (bear) to an inanimate object (ship; cf. Ólsen 1884, 76).

6 Markús was the son of Skeggi Bjarnason and possibly a brother of the poet Þórarinn Skeggjason. He appears to have had close ties to the Church; during his time as a lawspeaker, and with his guidance, Gizurr Ísleifsson, bishop of Skálholt (1081–1118), established the Icelandic tithe laws (*Íslendingabók/Landnámabók* 1968, I, 22).

7 The stanza is in *dróttkvætt* metre (the metre of the chieftain's followers).

In *Skáldskaparmál* the kennings for "bear" follow those for "wolf" – which are far more numerous –, and skaldic stanzas where synonyms for "wolf" are quoted come after them. Here we find frequent allusions to mythological stories involving wolves, i.e. Fenrir (the wolf who will swallow Odin in the Ragnarök, the final fight between gods and giants and all evil powers), or Geri and Freki (the two wolves – whose names both mean "the ravenous" or "the greedy one" – who are said to accompany the god Odin).[8] By the way, the name Freki (Old Norse *frekr* "greedy", Old English *frec* "desirous, greedy", and Old High German *freh* "greedy") occurs also among "bear" names.

After the *heiti* referring to "wolf", a short list of synonyms for "bear" follows. These describe the bear by cultural and natural images associated to the animal (*Skáldskaparmál* 322; *Snorri Sturluson* 1998, 88; *Edda [transl.]* 1997, 136):

Bjǫrn:
fetviðnir húnn
vetrliði bersi
fress íugtanni,
ifjungr glúmr
jölfuðr vilskarpr
bera jórekr
riti frekr
blómr ysjungr

Bear:
forest-walker (also a name for outlaws: *skoggangr*) cub
winter-survivor, grizzly
snarler greedy-tooth,
goshawk or the hooded one, the dark one
the yellow-bum (also one of Odin's names deriving from *jálnir* "one who makes noise"), shrivelled-gut,
she-bear, *Iorekr* (proper name, meaning "rich of horses", maybe a sea king)
scratcher the greedy one
the mighty one bustler.

Later in the same text, in the above mentioned *Þúlur* at the end of *Skáldskaparmál,* we have another list of bear synonyms (*Þúlur*, *Skáldskaparmál* 510; *Snorri Sturluson* 1998, 132; *Edda [transl.]* 1997):

bersi blómr
bera elgviðnir
blájaxl ísólfr
ok breiðvegi
bestingr bassi
balti hlébarðr
úlfr frekr vilnir
jórekr mǫsni

8 Both names can be interpreted as nominalised adjectives, according to Lindow 2001, 38.

grizzly the mighty one
she-bear elk-destroyer
blue (dark) molar ice-wolf
and broadway
haltered (therefore: a prisoner, an outlaw) she-bear
growler leopard (*hlébarðr*: loanword, according to the dictionary of Cleasby/Vigfússon 1957, 270, used indiscriminately for wolves and bears)
wolf greedy robber
jórekr (rich of horses) *mǫsni* (untranslated term).

The list goes on (*Þúlur*, *Skáldskaparmál* 511; *Snorri Sturluson* 1998, 132; *Edda [transl.]* 1997, 164):

Fetviðnir húnn
fress vetrliði
íugtanni jálfuðr
ifjungr vilskarpr.

forest-walker, cub,
snarler, winter-survivor,
greedy-tooth, yellow-bum,
hooded one, shrivelled-gut.

Most denominations coincide in the two different catalogues, but some are specific for each list, e.g. nine ones mentioned in the *Þúlur*: *elgviðnir*, dark-tooth, ice-wolf and broadway, haltered, *bassi*, growler, rough, robber, *mǫsni*, as well as three mentions in the other list: the dark one, scratcher, bustler.

Five of them are *nomina agentis*, describing the bear as an active subject, and are based on how the human eye saw the bear: forest-walker, scratcher, bustler, robber, growler, greedy, dark-tooth, winter-survivor.

Some coincide with those for "wolf", probably being confused by skalds who used them indifferently (sometimes the bear is even called a wolf). Unlike those for "wolf", no bear name is connected to mythology. The great majority is based on natural observation, some are based on folklore, as can be inferred from folk tales and popular legends (especially those spread in Sami areas in northeastern Scandinavia, i.e. "the hooded one"). Only "ice-wolf", clearly referring to "polar bear", shows a typical kenning mechanism based on an environment exchange pattern, like the following one: The ship is sea-travelling, the bear is forest-(walker)travelling; they exchange their space. Thus we have this proportion – the bear: the forest = the ship: the sea; consequently, we have the following logical conclusion that if the bear of the sea is the ship = the bear is the ship of the forest, according to Aristotle's analogical concept of metaphor (*Aristotle, Poetica*, 22).

Kennings gave the *dróttkvætt* poet a rich and transforming diction, and Markús Skeggjason, whose stanza quoted by Snorri in *Skáldskaparmál* 157 shows synonyms for bear occupying the basical position in all kennings, was extremely skilful in using them. In fact Markús was able to juxtapose unlike kennings in a series of metamorphoses, making a ship turn into a bear (or into a horse, or a serpent). And he goes on with verbs expressing the chosen animal's typical aggressive and rapid movements (*Skáldskaparmál*; *Snorri Sturluson* 1998, 75; *Edda [transl.]* 1995, 125):

Fjarðlinna óð fannir
fast vetrliði rastar;
hljóp of húna gnípur

hvalranns íugtanni;
bjǫrn gekk framm á fornar
flóðs hafskíða slóðir;
skúrǫrðigr braut skorðu
skers glymfjǫtur bersi.

Of the fjord snake waded through the snowdrifts
firmly the bear of the current;
jumped over the peaks of the mastheads
of the whale-house the bear;
the bear went forward on the old
on the flood sea skis' track;
the storm-breasting broke through of the prop
the skerry's clashing fetter the bear.

The bear is called by its common name only in the 5th and 8th lines (*bjǫrn* and *bersi*). Otherways it is called by *heiti*. We imagine an acrobatic bear which *óð* (waded), *hljóp* (jumped), *gekk* (went), *braut* (broke through) in his typical environment: the mountains. Although the stanza describes a ship sailing on the sea, the "metaphor bear" (which is the Base word of the four kennings) guides our imagination. The ship-bear waded through snowdrifts (of the fjord snake: the ship), jumped over the peaks (of the whale-house: the sea), went forward on the old tracks (of the sea skis: the ships), broke through the clashing fetter of the skerry. There is a conceptual "sea-mountain-exchange" according to a well-known skaldic tradition of the oxymoronic kenning, based on the association of contrary elements.

In the first kenning the bear is called *vetrliði*: one who has passed a winter = a winter-old bear, a winter-survivor: *vetrliði rastar* "the winter-survivor <bear> of the current": ship. The verb *vaða* "to wade, to go through shallow water or snow", reinforces the suggestion of coastal waters. It is spring, and the ship springs up again like a bear who wakes after sleeping all winter long. In the second couplet the ship leaps over the peaks of the whale-house (the waves) on the old tracks (on the old commercial sea lanes). The last couplet depicts the "bear of the prop", towering high on a sea-storm, while the waves clash through the rocky islands. In the last kenning the word *skorða* "the prop" points out that the ship is in the dock. It means that the journey is over, the cub has grown into an adult bear. The double image by which the poet plays with and combines different natural elements and linguistic domains results in an effective synthesis of ambiguities and multiple associations. Snowdrifts, peaks, or tracks suggest a mountainous area. We have therefore a double exposition of a bear moving and jumping in its natural world and at the same time of a bear-like ship behaving like an animal in the sea; all these environmental elements are connected to kennings for "sea".

At first Markús does not call the animal by its real name, he does it only in the second *helmingr* (half-stanza) of the *lausavísa*, at first he chooses "winter-survivor", "greedy tooth", and then he mentions "bear": "storm-battling little bear". The skaldic aesthetic of not openly naming things was a hiding one. It described objects and beings by epithets and periphrases. Obscurity could provide a secret code as well as create a powerful language known and understood only by a selected group of individuals bound by particular relationships. This sophisticated method was very much appreciated by kings and their followers, the *drótt*, from which the main and more solemn metre *dróttkvætt* takes its name.

Besides Markús's kennings, we have other skaldic "bear- metaphors" designating "ship":

- in a stanza in *hrynhenda* (flowing metre) in *Magnússdrápa* (Drápa about Magnús) by Arnórr jarlaskáld Þórðarson, 11th century: *hlébarðs hanka* – "the bear (leopard) of the cleat": ship,

- in some stanza fragments called *Ferðavísur* (Stanzas about journeys) by Hofgarða-Refr Gestsson, 11th century: *bjǫrn undinna festa* – "the bear of twisted moorings": ship, *vetrliði skíða* – "the bear (one who passed the winter) of planks": ship, *skautjalfaðar* – "*skyldir* (the requisitioner) of the sail-bear": ship,
- in a stanza of the anonymous *Plácitusdrápa*, 54, 12th century: *unnfress* – "the wave-bear": ship, and
- in a late Christian skaldic poem *Kátrínardrápa* (Drápa about St Cathrine), 16, by Kálfr Hallson, 14th century: *fress ǫldu* – "the bear of the wave": ship.

I want to point out two more interesting examples where *bjǫrn* appears in kennings with an unusual referent: poetry. In *Friðþjófsrímur* poetry is called both *ljóða bjǫrn* (II,59,3) and *ljóða fress* (I,59,4) "bear of songs" (Larsson 1893, 134). These seem to be variations of Markús Skeggjason's above-quoted kenning: *flóðs bjǫrn Skáld*, 157, for "ship". Here the bear becomes a metaphor for "poetry". This interesting transformation of the bear into poetry is not easy to explain. One possibility may derive from an original metaphor poetry = ship, since in the Old Norse myth of poetry, the mead of poetry is carried on a ship by two dwarfs. They had stolen it from a wise man called Kvasir. The dwarfs slew Kvasir and brewed the mead of poetry with his blood. *ljóða bjǫrn* and *ljóða fress* might thus be rare mythological kennings with "bear" as a Base word. With "bear" being a famous metaphor for "ship", they could be immediately identified as "the ship of songs", a well-known kenning for poetry.

We have seen that the animals occurring in kennings express different connotations for the ship. In a way they contribute to form the concept of a ship, by suggesting its manifold qualities – as they do in male proper names such as *-bjǫrn-*, *-ulfr-*, etc. (*Þorbjǫrn*, *Geirbjǫrn*, etc.), evoking particular characteristics associated to them.[9]

Summarising, the bear mentions in skaldic poetry are significantly fewer compared with those of other animals. That may suggest that this animal would belong to an older type of symbols associated with an ancient society of hunters rather than of warriors: a world dominated by other rituals and values than those in force in the Viking era, of which skaldic poetry is a typical expression.

Therefore my hypothesis is that the Viking cultural heritage – with its mythological lore essentially based on war and battle values – hosts descriptions with animals traditionally connected to the battle field: wolves, eagles, ravens, etc. The bear is rather connected with hunting and its rituals. This is evident also in the above quoted saga *Hrólfs saga kraka*, and in some east Scandinavian folktales, where remnants of ceremonies before and after bear-hunting are preserved.

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9 In Swedish folktales, Thor is sometimes connected to the Ursus constellation (the Great Bear); cf. Rosén 1913, 213–244; Ström 1967, 81–82.

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The role of bears in Old Norse literature – a bestiary concept?

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Keywords: Heroic, sagas, myth, shape-shifting, she-bear

Abstract: The purpose of this article is to discuss the role of bears in Old Norse literature. The study is mainly based on a comparison between the Legendary Sagas and The Poetic Edda as well as legal, onomastic, and runic sources. Themes such as shapeshifting, bears in dreams, and bears in mythical wisdom are analysed. Gender aspects are taken into consideration, for example the role of she-bears in the narrative, and also the perspective of the contemporary medieval audience. Regarding the audience's expectations, the personal name Bera, meaning she-bear, may have functioned as a signal for what was to come, namely, a story featuring a female with a strong connection to the wild. In a social hierachical perspective, the bear seems to be connected to the political elite as a symbol of power and strength.

Introduction

Studying Old Norse literature makes you aware not only of its greatness, but also of its many-sided genres, for example, *Eddukvæði* (The Poetic Edda) and the whole corpus of the Icelandic Sagas. Although these sources were actually written down in Iceland, mostly in the 13th–14th centuries, they were preceeded by a widespread oral tradition going back to the Viking Age, and in some cases even to the Migration Era. Even the medieval Icelandic and Norwegian written law-codes are, to a certain extent, influenced by orally performed legislative formula. The law-codes, as a part of the Old Norse literature, will, together with a number of Eddic lays and sagas, be taken into account in the present study (Vésteinn Ólason 1998, 19–20; Gísli Sigurðsson 2004, 56–60; 2008, 19–28).

The background of saga-writing is a wide-ranging subject, but important aspects of it are, among other things, the settlement in a new country and the gradual process of social and political changes. According to *Íslendingasögur* (The Sagas of Icelanders), the most well-known group of sagas, social ties, feud and honour were the main topics in Icelandic society during the Viking Age. In contrast to the above-mentioned literature, the *Fornaldarsögur* (The Legendary Sagas) take place outside of Iceland, mostly in other Scandinavian countries, and have a mythical-heroic character. Main themes in several Legendary Sagas are war and love affairs, but they also contain elements of folktales and the supernatural. The stories are supposed to have occurred before the settlement of Iceland. The function of this genre was not to tell "how it really was", but to entertain, and, if orally presented, the audience certainly loved to listen to these kinds of episodes, possibly performed with dramatic gestures and voices (cf. Gunnell 1995, 80–92; Lassen et al. 2003, 7–16).

The Poetic Edda is divided into mythological and heroic lays, the former telling of the heathen gods and goddesses, and other myths, and the latter of male and female heroes, passion, betrayal,

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 839–850 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134365

and revenge. The poems were collected and written down in the 13th century. They were, however, composed much earlier, though not before the 9th century (Jónas Kristjánsson/Vésteinn Ólason 2014, 19).

After this brief introduction to the land and the literature – where do the bears fit in? In the following, I would like to present the themes of my study, as well as emphasising the need to cross disciplinary borders, especially when studying cultural history. Such a perspective is often mirrored in legal sources. Provided that source criticism is taken into account (cf. Ney [Breisch] 1994, 48–53), law-codes may thus give detailed information on the society's structure and thoughts, for example on the imagined boundaries between the social and the wild, as well as on laws for handling bears in real life. Therefore, I would like to begin with some comments on the occurence of bears in the medieval Icelandic law *Grágás* ("Grey Goose"). This leads further to my main purpose, to discuss the role of bears in the Icelandic sagas and in the Eddic lays, and if there is a bestiary concept that is a cultural, commonly shared one, and how it may be defined (cf. Hastrup 1985, 136–154). In order to throw some light on this, I have gathered examples from the narratives that concern themes of shapeshifting, the meaning of the bear in personal names, on the bear as a symbol in dreams, and its role in mythical wisdom and knowledge. In analysing this concept, gender and social aspects are taken into consideration.

The bear in legal sources

When it comes to bears in "real life", the Icelandic fauna did not (and does not) include bears. However, *Grágás* does mention polar bears (*hvítabjörn*) and brown bears (*viðbjörn*). Polar bears did, apparently, sometimes reach the island on ice floes from Greenland, and the law regulates how men should handle them. It was a legal right to hunt polar bears and use their skin and meat (*Grágás* 29, 32). The law also regulates how brown bears should be handled, if they were brought to Iceland. Some brown bears may thus have been shipped over. However, according to the law, this was a serious crime; the owner of the bear and the captain of the ship got exiled, and the steersman had to pay a fee. If the bear got loose and harmed a person or some property, the man who had brought the bear was responsible. There are specific rules for domesticated bears (*alibjörn*) to prevent damages. According to the law, the owner of a domesticated bear should handle the animal as if it was a dog, and if someone injured this bear he should pay a fee for it, and if there was a more serious injury, the punishment was exile. The law does not say for how long, but in most cases the duration of exile was three years. If the bear-owner set his animal on someone and the person got hurt or killed, the owner was outlawed, and the bear had no right to live (*Grágás* 259, 261, 349).

Grágás was written down in the middle of the 13th century, but was replaced by *Járnsíða* ("Ironside") in 1271, after the Icelandic Freestate fell under Norwegian sovereignty. Under the new law, polar bears and brown bears were still mentioned in connection with legal hunting. However, domesticated bears were no longer a legal matter, most likely due to internal or external changes. Nevertheless, a long time after, in the early modern centuries, they were allowed in Scandinavia as, for example, valuable king's gifts and for entertainment (*Járnsíða*, 176, 184; Berg 1965, 93–112; Hastrup 1985, 207–208, 232–237; Gunnar Karlsson 1992, ix–xxxiii; Haraldur Bernharðsson et al. 2005, 13–25).

Transformation into a bear

Bears have indeed over time been hunted for skin and meat, but were also seen as a symbol of savagery and strength. The strength of a bear is, among other things, a frequent motif in sayings and folklore tales (see Böldl, this volume). In the latter, people encounter bears in the woods, sometimes in the shape of a man-bear, the offspring of bear and human (Byock 1998, xxvi–xxviii; Kuusela 2019, 96–107).

The transformation of a man into a bear is related in The Legendary Saga *Hrólfs saga kraka* (*The Saga of King Hrolf Kraki*), which was composed in its present form around 1400 (cf. Lanzing 2009, 405–430). However, it is estimated that a king named *Hrólfr* lived in Scandinavia in the 6th century. In this saga, a man called *Björn* ("bear"), the son of a king up in the north of Norway, and a young girl, *Bera* ("she-bear"), love each other. *Björn* has a stepmother, Queen *Hvít* ("White"). She was, according to the saga, the daughter of the King of the Sámi and lived, before marrying *Björn*'s father, in the Finnmark region in northern Norway. This may connect her with the Sámi religion and shamanism. The queen tries to seduce *Björn*, but in vain. When he refuses to be her lover, she is hurt by his rejection and wants to punish him with witchcraft (*Hrólfs saga kraka*, 47; *The Saga of King Hrolf Kraki,* 34–40):

> *Hún lýstr nú til hans með úlfhanzka ok segir, at hann skyldi verða at einum híðbirni ólmum ok grimmum, […].*
>
> She then struck him with her wolfskin gloves, telling him to become a cave bear, grim and savage, […].

He will never be released from the spell (cf. Jónas Kristjánsson 1988, 352–353; Byock 1998, vii–xxxii; Strömbäck 2000, 24–25; Aalto 2010, 123–124).

Björn disappears, and no one knows where to or why. But one day, *Bera* encounters a bear. The bear is approaching, but not threatening her. She recognises his eyes and follows him into his cave. Since the spell has only transformed *Björn* into a bear by day, he is "retransformed" at night. *Bera* stays with him in the cave, but one night *Björn* tells her that he will be hunted the next day and killed, so this will be their last night. He continues as follows: Firstly *Bera* must go to his father, the king, and ask him to give her "whatever is under the beast's left shoulder" (it is his ring, and the ring will show the bear's real identity). Secondly, she must be aware of Queen *Hvít* – she will be suspicious and try to make her eat of the bear's meat, but this she must not do as she is pregnant and will give birth to three boys, and if she tastes the meat it will affect the children. Thirdly, *Björn* tells her to go home to her father and give birth, and he adds (*Hrólfs saga kraka*, 49; *The Saga of King Hrolf Kraki*, 38):

> *"Ok ef þú mátt eigi annast þá heima fyrir ósköpum þeira ok ófyrirleitni, leiddu þá í burtu, ok farðu hingat til hellisins með þá. Hér muntu sjá kistu með þremr gólfum. Þat munu segja rúnir þær, sem þar eru hjá, hvat hverr þeira skal eignast. Vápn þrjú eru í berginu, ok skal þat hverr hafa, sem honum er ætlat. Sá, sem fyrst kemr til, sonr okkarr, skal Þórir heita, annarr Elg-Fróði, þriði Böðvarr, ok þykki mér þess líkara, at þeir verði eigi litlir fyrir sér ok þeira nöfn munu lengi uppi vera."*
>
> "If you are not able to raise them [their sons] at home, because of their strange and uncontrollable natures, bring them here to the cave. You will find here a chest with three bottoms. Runes are carved on it, and they will tell what each of the boys should receive as his inheritance. Three weapons are imbedded in the rock, and each of our sons shall have the one intended for

him. Our firstborn will be called Elg-Frodi, the second son, Thorir, and the third, Bodvar. It seems to me most likely that they will not be weaklings and that their names will long be remembered."[1]

Björn then foretells *Bera* many other things, but soon the bear-shape comes over him again. He leaves the cave and *Bera* follows. Hunters are waiting outside the cave, "circling the side of the mountain". A large pack of hounds are in front of the men, and the bear tries to escape. In the end, the men form a ring around the bear. After slaying all the dogs and one man, he gets exhausted, and he is finally killed by the king's men (*Hrólfs saga kraka*, 49–50; *The Saga of King Hrolf Kraki*, 38–39; cf. Oehrl 2013, 299).

As instructed, *Bera* takes the ring from the bear's left shoulder. Queen *Hvít* prepares a great feast with the bear's meat for the men – and at this feast she forces *Bera* to taste the meat (*Hrólfs saga kraka*, 51; *The Saga of King Hrolf Kraki*, 38–39):

Hún [Hvít] bitar fyrir hana [Bera], ok þat verðr af leiknum, at hún etr þann bita. Drottning skerr þá annan ok lætr í munn henni, ok þar kemr lítit korn niðr af þeim bita, ok sló þá úr munni sér ok kveðst eigi meir mundu eta, þó at hún píndi hana eða deyddi.
Drottning mælti: "Vera kann, at nú dugi nokkut," ok hló at.

The queen cut a small piece of the meat for Bera, and in the end Bera ate it. The queen then cut another piece and put it into Bera's mouth. Bera swallowed a small morsel of it, then spat the rest out of her mouth. She declared that she would not eat any more, even if she were to be tortured or killed.
"It may be," said the queen, "that this bit will be enough," and she burst out laughing.

When *Bera* gives birth to the triplets, the first boy is half man, half elk. He is an elk below the navel, and is called *Elg-Fróði*. The second boy has dog's feet and is called *Þórir Hundsfótr*. However, the third boy, *Böðvarr*, is without any blemish. *Fróði* has an "unyielding nature", and thus he is brought into the bear's cave, gets the short sword that was intended for him and moves up into the mountains. *Þórir* is also brought into the cave, and takes an axe from the rock. He then goes to see his brother *Fróði*, and later becomes king over the Gauts. *Böðvarr* takes revenge for his father's fate and kills the queen, and after the king's death he takes over the kingdom. I will leave the rest of the story untold; however, *Böðvarr*, according to the saga is, like his father, connected with a transformation into a bear-shape, and is a warrior (*Hrólfs saga kraka*, 50–57; *The Saga of King Hrolf Kraki*, 39–44; cf. Byock 1998, xxix).[2]

The bear motif in *Hrólfs saga kraka* leads to political power and prosperity, at least for the sons with bear ancestry. The male protagonist, *Böðvarr*, also shows some similarities with a special folk tale called "Bear's Son Tale" (see Frank, this volume; cf. Harris 1973, 25–53; Mitchell 1991, 58–59; Byock 1998, xxvi–xxviii; Strömbäck 2000, 79–87, 187). Characteristic elements of this tale are, among others, the hero's animal ancestry and a special sword, and these fit in with *Böðvarr*. As in fairy tales, the author of *Hrólfs saga kraka* is using the epic number three – three sons, three weapons, three

1 In the Icelandic edition used here, the first born is said to be *Þórir*, but in the English translation it is *Elg-Fróði*. The difference probably depends on textual variations in different manuscripts/editions. In a following episode in the Icelandic text, it is said that *Elg-Fróði* was actually the first born; see below in the present article; cf. Guðni Jónsson 1965, xxv–xxvi; Byock 1998, xxxvi.

2 *Böðvarr* got the nickname *Biarki*, a diminutive of *biari* (bear), that is "little bear", cf. Lind 1920/1921, column 22. He may be defined as a berserk; cf. Sundqvist, this volume.

attempts to get the best weapon out of the rock, all in order to increase the attention of the audience. The significance of animal ancestry for male virtues as strength and courage is obvious in *Hrólfs saga kraka*, but there are also some other notable gendered aspects that consider the female. Firstly, Queen *Hvít* knows how to use witchcraft for transforming a man into a bear; secondly, *Bera* is defined with strong connections to the wild and the knowledge of runes – and she is the bear's match and the mother of his children.

The bear in onomastics

The name *Bera* leads me to onomastics. Was it a common name, as the male counterpart *Björn* was? In comparison with the "Scandinavian Dictionary of Runes" (*Nordiskt runnamnslexicon)* by the Swedish runologist Lena Peterson, this female name is not represented in her huge collection of runic material from the Viking Age (from Sweden, Norway, Denmark, and the British Isles). While the name *Bera* is not represented at all, not even as an element, the male name *Biǫrn* is the second most frequent name (with 118 examples, after the leading *Sveinn* with 147 examples), and as a second element *-biǫrn* is the second most common one (in 51 compounds), after another wild animal, *-ulfr* (in 52 compounds).[3]

However, *Bera* is mentioned in Old Norse literature, but only in a few places. It could be of interest to take a closer look at the contexts in which the name appears. As a consequence of its lexical meaning and the eventual specific contexts, hypothetically this female bear name may function as a signal to the audience of a coming theme with a close connection to the wild (cf. Smith 2016, 307–308).

Occurrences of the she-bear (Bera)

In the heroic Eddic lay *Atlamál in grœnlenzku* (*The Greenlandic poem of Atli*), the name *Bera* (along with the compound *Kostbera*) is found, and is used for the same person, but there is no *Björn* whatsoever. *Bera* is the wife of *Högni*, a brother-in-law of *Sigurðr Fáfnisbani* (Sigurd the Dragonslayer). She has seen a bear in her dreams, and tells her husband of its frightful appearance (*Atlamál in grœnlenzku*, 386:17; *The Greenlandic Poem of Atli*, 220:17):

"Biǫrn hugða ek hér inn kominn, *bryti upp stokka,* *hristi svá hramma* *at vér hrædd yrðim;* *munni oss mǫrg hefði,* *svá at vér mættim ekki,* *þar var ok þrǫmmun* *þeygi svá lítil."*	"I thought I saw a bear come in here, *smash up the panelling*, swing with his paws so that we were afraid; many of us he held in his mouth so that we were helpless; his lumbering made no small amount of noise."

3 However, the names *Bersa*/*Birsa* are found on runic stones in Uppland, Sweden. There are some variations but the same meaning: *Bersa*: [**birsa**] U 189, **bersu** U79B, **birsu** U 79A, and *Bersi*, meaning "small bear"; cf. Peterson 2004, 6, 46; 2007, 41, and passim; cf. also Janzén 1947, 35, 44. The element *kost-* in *Kostbera* is probably derived from the Old Icelandic noun "*kost*", m., (with the meaning "choice"), cf. Lind 1910, column 715. The element *-bera* has also been interpreted as "to carry", cf. Von See et al. 2009, 590–591, with references.

The context is that *Bera's* husband and his brother *Gunnarr* have been invited to go to their brother-in-law *Atli*. The invitation is followed by a message from *Atli*'s wife *Guðrún*. It consists of both a written runic message and a gold ring, encircled with wolf's hair. *Bera* is the only one who can interpret the runic message; it is a warning for her not to go. She therefore tries to convince *Högni* to stay. We do not know if she has actually had the dream, or just says that she has. However, *Högni* interprets his wife's dream as meaning that terrible weather is to follow, and that the bear is a symbol of a storm (*Atlamál in grœnlenzku*, 386:18; *The Greenlandic Poem of Atli*, 220:18):

"Veðr mun þar vaxa,	"That must mean a storm coming, it'll soon
verða ótt snemma,	be dawn;
hvítabjǫrn hugðir,	thinking of a *white bear*, that's a blizzard
þar mun hregg austan."	from the east."

It has been said that the polar bear mentioned in the stanza above may contribute to the poem's Greenlandic connection (Jónas Kristjánsson/Vésteinn Ólason 2014, 134, 147–148). However, it is *Högni* who defines the bear as a polar bear, not *Bera*. Another plausible explanation is that *Atlamál in grœnlenzku* was preserved among the Greenlanders and came from a Greenlandic narrator when the Eddic poems were being compiled (Jónas Kristjánsson 1988, 70; Lönnroth 2016, 408).

In *Völsunga saga* (*The Saga of the Volsungs*), a Legendary Saga written down in the middle of the 13th century, with influences from the heroic lays about *Sigurðr Fáfnisbani*, *Bera* bursts out in the corresponding episode (*Völsunga saga*, 202; *The Saga of the Volsungs*, 98, 13–26; cf. Glauser 2007, 13–26):

> *"Björn hugða ek hér inn koma", segir hún, "ok braut upp konungs hásæti ok hristi svá hrammana, at vér urðum öll hrædd, ok hafði oss öll senn sér í munni, svá at ekki máttum vér, ok stóð þar af mikil ógn."*
>
> "I thought a bear entered here", she said. "He *destroyed the king's throne* and waved his paws about so much that we all grew afraid. He had us all in his mouth together, so that we could do nothing and great terror arose."

Högni answers (*Völsunga saga*, 202; *The Saga of the Volsungs*, 98, 13–26):

> "Þar mun koma veðr m*ikit, er þú ætlaðir hvítabjörn."*
>
> "A strong tempest will come, where you thought it a white bear."

One interesting difference between the Eddic lay and the saga is the destruction done by the bear; in the former he "smashed up the panelling", and in the latter he "destroyed the king's throne" (cf. my italics in the quoted stanzas). Thus, historical changes are reflected by the contemporary saga author's choice of words. The outrageous bear is threatening a symbol of power and thereby the political structure of the medieval kingdom.

The name *Bera* is used in only two Legendary Sagas, and there in connection with bears. In comparison, there are a few examples from The Sagas of the Icelanders, for instance in *Egils saga Skalla-grímssonar*. In this saga, there are three women named *Bera*. One is *Bera Yngvarsdóttir*, the wife of *Skalla-Grim Kveld-Úlfsson*, a suitable match for a man whose father was *Kveld-Úlfr*, depicted as a werewolf and berserk, especially when considering their names, the connection of which to

the wild is evident. Their grand-daughter, the daughter of *Egil*, is another one, and a third one is *Bera Ormsdóttir*, the wife of *Egil's* grandson *Skúli* (*Egils saga Skallagrímssonar*, ch. 1, 20, 31, 35; cf. *Hauksbók*, 127; *Landnámabók* ch. 25; cf. Heimir Pálsson 2007, 96–121). There is no obvious connection between these *Bera*-named women and the bear, but the semantic meaning and the character associated with the bear have truly effected the name-giving. Besides, *Skalla-Grím's Bera,* as well as *Bera* in *Hrólfs saga kraka,* came from Norway, something that may lead to further questions on the tradition of name-giving. That the *Bera*-name recurs in *Egils saga Skallagrímssonar* is confirmed through *Hallbera Úlfsdóttir*, the mother of *Kveld-Úlfr*, and *Hallbera*s father, *Úlfr* ("wolf"), who gave her a she-bear name and her brother *Hallbjǫrn* a bear-name, which is indeed a genealogical statement at the beginning of the saga.

The bear in dreams

Compared to the examples from Eddic poetry and *Völsunga saga*, bears in dreams forecast future events and also comment on something that has already happened, as in the following three Legendary Sagas. In *Örvar-Odds saga,* a bear-*fylgja* in a dream reacts to how a man named *Guđmundr* acts against his brother *Oddr*. The former is on his ship waiting for good weather, and his nephew *Sigurđr* is with him. *Guđmundr* tells his nephew of his dream. He dreamt that a polar bear was lying in the bay. The bear's head and back met over the ship, and it was a frightful sight. *Sigurđr* interprets his dream to mean that the bear must be the *fylgja* of *Oddr*. A *fylgja* ("one who follows") is connected to the belief that all individuals had one or more *fylgja*, in female or animal shape. The animal *fylgja* was thought of as a symbol of a man's character. Therefore, the *fylgja* of a chieftain or a king was often in a bear's shape. *Guđmundr* and *Sigurđr* are convinced of the serious nature of this dream; because they did not let *Oddr* sail away with them, this bear-*fylgja* is obviously angry. They therefore decide to ask him to go with them (*Örvar-Odds saga*, 212–213; Hastrup 1988, 152–153; Näsström 2002, 313–314).

The role of the bear as a *fylgja* in dreams also occurs in *Þorsteins saga Víkingssonar*. The Swedish King *Njörfi's* son, *Þorsteinn*, is dreaming of 30 wolves and eight bears. One of the bears had red cheeks. *Þorsteinn* asks his younger brother to interpret this dream, and he assumes that the big bear with red cheeks must be the *fylgja* of their enemy *Jökull*, the son of the Norwegian Viking king, and the other bears are his seven brothers, and the wolves are the men coming to fight with them (*Þorsteins saga Víkingssonar*, 29).

A third example is from *Hrólfs saga Gautrekssonar*. Queen *Ingigerđr* is dreaming of wolves, polar bears, one with red cheeks, and a frightful beast (*it óarga dýr*). This dream is, with variations, repeated twice. On the first night, the queen wakes up and tells her husband, the Swedish king, *Eirekr*, of the dream. She herself interprets the wolves as men's *fylgjur* (*manna fylgjur*), the beast as King *Hrólf's fylgja*, and the polar bear as the *fylgja* of the king's fosterbrother. In her own interpretation, she underlines the strength of the bear. In her second dream, there are wolves running from a ship, a frightful beast, two polar bears, and even a boar. She says, as before, that the beast must be the *fylgja* of King *Hrólfr*, but this time the animal seems bigger and worse. The boar is the *fylgja* of the king's brother and, since there were two polar bears, the king must have the good company of another king or king's son. *Ingigerđr* and *Eirekr* are in Uppsala, and, according to her dreams, an aggressive attack from King *Hrólf* is imminent (*Hrólfs saga Gautrekssonar*, 71–72, 89).

The bear in mythical wisdom and knowledge

Through the ability to foresee the future, a bear in a dream is in a way connected to mythical wisdom, as is the knowledge of runes. *Bera* in *Völsunga saga* and *Atlamál in grœnlenzku*, and *Bera* in *Hrólfs saga kraka* know how to read runes and, in another heroic poem, *Sigrdrífumál* (The Lay of Sigrdrifa), a former valkyrie, *Sigrdrífa*, transmits indispensable knowledge to *Sigurðr Fáfnisbani*, especially runic knowledge, for all kinds of troublesome situations in life.[4] The context is that *Sigrdrífa* has given the wrong king victory in battle, and has been punished (*Sigrdrífumál*, prose 314; *Lay of Sigrdrifa*, prose 167):

> *En Óðinn stakk hana svefnþorni í hefnd þess ok kvað aldri skyldu síðan sigr vega í orrostu ok kvað hana giptask skyldu.*
>
> And Odin pricked her with a sleep-thorn in revenge for this and said that she would never again fight victoriously in battle and said that she should be married.

Sigurðr awakens the sleeping valkyrie, and she brings him a horn full of mead. It is a memory-drink for remembering the deep knowledge transmitted to him. *Sigrdrífa* is referring to *Oðinn*, who, among other things, says that if a man wants to be "wiser in spirit than every other man", he should cut runes on a shield, on glass, gold, amulets, and on the seat of honour, and also on the bear's paw and on the wolf's claw (*Sigrdrífumál*, 317:17; *Lay of Sigrdrifa*, 168:13, 169:16):[5]

[…] á bjarnar hrammi	[…] on the bear's paw and on Bragi's
ok á Braga tungu,	tounge,
á úlfs klóm	on the wolf's claw, and the eagle's beak,
ok á arnar nefi,	[…].
[…].	

Conclusion

The transformation into a bear shape, the she-bear motif including traditions in name-giving, and bears in dreams are in my opinion the most important themes for analysing the role of bears in Old Norse literature. However, there are also some other aspects, as for example "bear fights" (cf. Oehrl 2013, 297, 299, 306–307, 312–313). Generally, bears in The Sagas of Icelanders appear as dangerous animals, a threat both to cattle and to man, and thus must be fought, and as *Grettir* comments about this kind of fight, it is the hardest trial of manhood (*Grettis saga Ásmundarsonar*, ch. 21).[6]

Since a bear was also a valuable animal, another theme could have been "the bear as a king's gift". One example derives from the tale *Auðunar þáttr Vestfirzka*, where a man named *Auðunn* is spending everything he has on buying a polar bear in Greenland. He then ships the bear to Norway, where he

4 The Valkyries lived in Valhall. They were Oðin's maids, serving mead to the fallen warriors, and they took part in battle, choosing who should fall or survive. Some of them interacted in the human world, as for example *Sigrún*, who supported *Helgi Hundingsbani* in battle and then married him, cf. *Helgakviða Hundingsbani* I–II, 247–258, 270–283; *The First Poem of Helgi Hundingsbani*, 114–122; *A Second Poem of Helgi Hundingsbani*, 132–141.

5 Bragi was the god of poetry, cf. *Sigrdrífumál*, 317, note 17.

6 Bear fights also occur in *Víga-Glúms saga*, ch. 3, and in *Finnboga saga ramma*, ch. 11. The bear in *Finnboga saga ramma* did great damage to the cattle, and therefore was outlawed like a man, and a price was set on his head. This bear was actually made "human" in crossing the border between nature and culture, cf. Tolley 2009, 580; Oehrl 2013, 301.

goes ashore keeping the bear on a lead, searching for lodging. The Norwegian king wants to buy the bear, but *Auðunn* instead intends to sail to Denmark and bring the bear as a gift for the Danish king (*Auðunar þáttr Vestfirzka*, ch. 1; cf. *Vatsdæla saga*, ch. 16).

My starting point was the imagined boundary between the social and the wild, which led me to further ask if there was a bestiary concept in the poetry and sagas – and there is. Bears in sagas are quite frequent, but evidently there is a difference in role and motif depending on whether the bear occurs in a more realistic saga or in a supernatural one. In Eddic poetry, however, bears are underrepresented, and their role is in general quite modest, with the exception of the previously mentioned *Bera* character and the importance of carving runes on a bear's paw in order to achieve wisdom. The main and constantly present animal symbol in the Eddic lays is the wolf. According to the folklorist Clive Tolley, the wolf belongs entirely to the wild, while the bear, since it shares some features with humans, may be defined as a liminal creature, and liminality means the crossing of boundaries, and this in its turn has been seen as a mark of the bear's holiness and power (Tolley 2009, 580; Ney 2012, 483–489).

In my examples, above all those from The Legendary Sagas, the she-bear motif dominates in the shapeshifting episodes (without taking the berserkers into account). Regarding bears in dreams in this saga category, I would like to point out that even if queens are certainly bear-dreamers, this kind of dreaming is not after all restricted to a certain gender. However, the bear as a symbol of strength and courage is connected with masculinity in a social and political sense, and above all in a hierarchical perspective, since the occurence of bears is recurrently associated with the king and the king's men.

With this social hierarchical perspective in mind, I would like to comment on The Legendary Sagas as a genre. These sagas were highly appreciated at the king's court or at a chieftain's house. Stories of people "in between", in this case both bear and human, did fascinate (and still do). In connection with the audience's expectations, even if more research needs to be done before drawing further conclusions, in my opinion it seems that the she-bear has a special role. For the audience, the name *Bera* may actually have functioned as a signal for what to expect: a female with some connection with a bear or to the wild in another sense.

I will finally once again point out the importance of legal sources for our knowledge on how people thought and what they believed in, and will end with a practical example. According to the law, it was important to announce a homicide as soon as possible and to make it known to the nearest farmstead (unless the killed man had family there – in that case the risk of blood-vengeance was immediate). When announcing a homicide, the law forbade you to blame it on a bear, that is, unless the killer was actually called *Björn*, you were not to say that it was "*björn*" who did it (*Den ældre Gulathings-Lov*, ch. 156).

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The bear in popular belief, legend and fairy tale

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Keywords: Fairy tale, legend, popular belief, hunter's jargon, bear's son

Abstract: The bear plays a prominent role in popular belief and folkloristic traditions such as legends, fables and fairy tales. A closer look at these traditions shows that the ideas about bears are not at all uniform. Rather, numerous characteristics are attributed to the bear that can also be partly contrary: Thus it can on the one hand appear as an animal of wisdom, on the other hand it can be associated also with stupidity, for example in funny fairy tales. A certain similarity of the build of the bear to that of a human as well as the exceptional size and strength of this animal form the starting point of this varying attributions. With particular regard to Olaus Magnus's Historia de gentibus septentrionalibus *(1555), which represents the most fruitful Scandinavian source of premodern concepts of the bear, this contribution provides an overview of the most important bear motifs in fairy tale and legend as well as in popular beliefs.*

Introduction

A casual glance into folkloric, popular medical and iconographic handbooks or encyclopedias (cf. Peuckert 1927; 1930/1933; Stauch 1937; Zenker 1950; Wehrhahn-Stauch 1968; Reichstein/Ranke 1976; Paproth 1977) already provides an impression of the abundance of ideas that have been associated with the bear since time immemorial.[1] The bear plays a prominent role in many religions and mythologies, especially in the sphere of hunting. It is well represented not just in legends and fairy tales but for example also in medieval proverbs (cf. Thesaurus proverbiorum medii aevi 1995, 337–342). The importance of the bear in religious and symbolic thinking, going back as far as prehistory, is shown for one thing in the constellations of Ursa Major and Ursa Minor (cf. Künzl, this volume) and also in the fact that the Indo-European terms for the bear were substituted in the Germanic languages by a noa-name that refers to the brown colour of the animal (cf. Reichstein/Ranke 1976, 46; Björklöv 2010, 27; cf. also contributions by Nedoma, Særheim, or Udolph, this volume). Even according to surviving popular belief, anger is provoked in the bear, which understands human language and can even read thoughts, when it is called by its correct name (cf. Schön 2006, 23). The Nordic languages contain numerous names to describe the bear, of which *Nalle* and *Bamse* are without doubt the most popular, but terms like *Bestefar* (grandfather), *Gubbe* (old man), *Sötfot* (sweet foot), *Svarten* (black one), and many others have been documented and are often used in folk tales (cf. Tillhagen 1985, 131).

1 We are talking here, apart from the importance of the polar bear for the arctic peoples, almost exclusively about the brown bear (*Ursus arctos*); cf. Paproth 1977, col. 1194.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 851–862 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134366

A major reason for the eminent importance of the bear in cultural history lies of course in its physical strength, which is superior to that of all of Europe's other animals. It is not uncommon for this to appear exaggerated into the demonic sphere in legendary traditions. In this connection, there is a remarkable belief that the growth of a bear never finishes and even the flesh of a killed bear continues to grow (cf. Peuckert 1927, col. 884). The observation already made by classical authors that the savagery of the bear increases extraordinarily when it is hungry or when its young are threatened is absolutely correct (cf. Zenker 1950, col. 1143). However, to the special aura of the bear also belong – to a larger extent than with other animals – ideas of specific intellectual and magical strengths, which make the bear on the one hand into a sinister and, from a Christian perspective, frequently fiendish creature, but through which at the same time special relationships between man and bear can be created. These relationships arise above all from the frequently noted similarity between the body of man and of bear, which is supposedly demonstrated by skinned bears in particular (cf. Peuckert 1927, col. 884; Tillhagen 1985, 132). Johann Heinrich Zedler's *Universallexikon* from the era of the Enlightenment also mentions as "something wondrous" in this connection that the she-bear suckles her young not by facing them "backwards" but "forwards towards her chest with two teats, like a woman" (Zedler 1731, vol. 3, col. 115: "nicht 'hinterwärts', sondern 'vorwärts nach dem Brust-Kern zu mit zweyen Gesäugen, gleich einem Weibs-Bilde'"). In the *Deutsches Wörterbuch* of the Brothers Grimm, it is stated that "huntsman-like the hand, finger and gait of a human are ascribed to it, because it can rear up, straighten up and walk upright" (Grimm/Grimm 1854, col. 224: "weidmännisch wird ihm gleich dem menschen hand, finger und gang zugeschrieben, weil er sich aufbäumen, emporrichten und aufrecht gehen kann"). These similarities invite anthropomorphising considerations in particular; indeed, they make the bear almost into a crossover between the human and the animal sphere, which will be expanded on in more detail below. The numerous fairy tales and legends about humans turned into bears reflect such ideas, too (cf. Peuckert 1927, 162–163). Although many sources refer to its cleverness and also, for example, to its exceptional skill in killing its prey, the bear can due to its apparently clumsy-funny movements also end up as the representative of gormlessness and gullibility, especially in funny fairy tales and fables.

On the basis of its specific physical qualities, the bear moreover plays a prominent role in popular medicine. Healing, regenerative, fertility-supporting and strengthening effects are ascribed to the various components of the bear, its blood, fat, fur or testicles; furthermore, teeth and claws, which were also found as grave goods (cf. various contributions, this volume), could apparently fulfil amulet functions still in recent times (cf. Peuckert 1927, col. 901–905). A bear's tooth carried in the hunter's pocket in northern Swedish Ångermanland fulfils an apotropaic function – it is supposed to protect him against being bitten by the bear (cf. Tillhagen 1985, 148). A bear's tooth is also considered helpful against toothache (cf. Björklöv 2010, 276). The right eye of a bear, ground and dried and hung in a bag around the neck, protects small children against nightmares (cf. Björklöv 2010, 277). In many areas of Scandinavia, strengthening effects were attributed especially to the contents of the bear's gall bladder, which were regarded as early as antiquity as a remedy against the most diverse illnesses (cf. Höfler 1912 204–205); mixed with brandy, they were supposed to bestow strength and courage on hunters and sooth eye, kidney and other ailments. In Norrbotten (northern Sweden), this potion was administered as a tonic to women in childbirth (cf. Tillhagen 1985, 146). The idea that a particularly foul-tasting medicine develops a special healing property probably plays the decisive role in the case of the gall bladder contents. However, most of these popular medical concepts are based on a sympathetic logic according to which the special physical or organic qualities of the bear are transferable to humans. Thus, the paws of bears, according to popular belief charged with special nutritional potency, also play a role in folk medicine; they could, for example, be applied as a palliative during labour pains (cf. Björklöv 2010, 278). In her *Liber subtilitatum diversarum naturarum creaturarum* (Book about the Secrets of the Various Natures of Creatures) from around the middle

of the 12th century, Hildegard von Bingen warns against the consumption of bear's flesh, because this arouses sexual desire, whereas the bear's fat represents a proven hair restorer (cf. Björklöv 2010, 47).

It will have become clear already that the generally accepted premodern ideas about the bear can in no way be reduced to a uniform structure of meaning. One characteristic of the bear just seems to be that, regardless of the current context, the most diverse, often contrary features and behaviour can be ascribed to it. While the traditional material, which is attributable in the broadest sense to popular legend, is based predominantly on concrete observations and experience which demand authenticity and are being worked on with the help of various "mythical" patterns of interpretation, the bear of the popular fairy tale is a creature of pure fantasy, which can indeed be occasionally provided with legendary features but has no connection with the audience's everyday life and is rather frequently described as a simple-minded, likeable creature. Thus, fairy tales about bears can turn up in regions where bears never occurred, e.g. on the Faroe Islands. Often the bear has become a mere animal sign here that, like the cunning fox or the brutal-malicious wolf, embodies a human characteristic.

Christianity as the decisive framework of meaning for the Middle Ages and the early modern period also belongs of course to the traditions which have played a part in forming the popular image of the bear. The bear is already encountered in several places in the Old Testament; David boasts to Saul that with the help of God he has defeated a lion and a bear (1 Sam. 17:34–37),[2] and special respect for the superiority of the bear seems to be expressed in the proverbial expression of the prophet Amos: "As if a man did flee from a lion, and a bear met him" (Amos 5:19; cf. also Thesaurus proverbiorum medii aevi 1995, 340). The bear appears downright as "king of the animals" in the Old Testament, which is perhaps reflected in Master Amund's murals in the church of Södra Råda (Värmland; 1496), where the animal depicted in the centre of the creation of quadrupeds can likely be identified as a bear.[3] Overall, bear attributes such as strength, anger and a threatening nature predominate in the Bible (according to the Old Testament, the bear also falls into blind rage particularly when it is robbed of its young; cf. 2 Sam. 17:8 and Prov. 17:12), which is why the bear is already in early Christianity regarded as a demon and as a theriomorphic symbol of, among other things, the vice of anger and cruelty as well as hedonism (because of its affinity to honey). This demonising perspective can be observed in the popular perception of the bear up to the 19th century, when it can, for example in Norwegian folk tales, be dubbed the horse of the Devil.[4] Thus the frequent fights between man and bear in Romanesque sculpture can be interpreted mostly as a struggle with evil (cf. Stauch 1937, col. 1443–1444). However, the bear, just as the lion, is a thoroughly equivocal symbol in Jewish-Christian tradition. Its imposing strength can also mean God's omnipotence, and it appears, through the restraint of its wild nature, as a symbol of the converted heathen (cf. Zenker 1950, col. 1146). The aforementioned ambiguity of the bear is thus reflected in the Christian tradition, too.

Ideas expressed in classical zoology and medicine, which go back to Aristotle and Pliny in particular (cf. Zenker 1950, col. 1143–1144), and the symbolisations of bears in the Christian tradition as well as diverse experiences with the bear, which are articulated with the help of "popular-religious" patterns of interpretation and folkloristic narrative schemata – all these traditions and forms of knowledge are frequently present in the popular image of the bear at least up to the time of the Industrial Revolution. The boundaries between elements of classical general education and modern hunter's cock-and-bull-stories can thereby occasionally merge. In the case of written sources, the – conscious or subconscious – "better knowledge" of an author as opposed to his illiterate informants

2 A whole series of late medieval chalk paintings in Swedish country churches corroborates the popularity of this biblical passage, for example in Almunge and in Ekeby churches (Uppland).

3 Cf. medeltidbild.historiska.se/medeltidbild/visa/foto.asp?imageId=9416614.

4 Cf. Stauch 1937, col. 1446; Wehrhahn-Stauch 1968, col. 243–244. For the modern continued existence of these ideas cf. Peuckert 1927, col. 890.

must also be reckoned with in many cases. It is thus not possible to gain a purely Nordic conception of the bear, going back to autochthonous experiences and traditions.

Nevertheless, this contribution will attempt to outline the most important aspects of the spheres of popular beliefs, legends and fairy tales, which constitute the idea of the bear in premodern Scandinavia, even though – with the considerations already mentioned in mind – there cannot be a consistent demarcation of scholarly and literary conceptions. The bear chapters in Olaus Magnus's *Historia de gentibus septentrionalibus* (1555) should as far as possible serve as guidelines, since this work brings together various bodies of knowledge about the bear in an illustrative and contemporary way. A brief look at the bear in fairy tales at the end aims to round off the picture.

Olaus Magnus's *Historia de gentibus septentrionalibus*

This work from 1555 represents by far the richest Nordic source for premodern perspectives on the bear, and at the same time it is a prime example of the amalgamation of classical and medieval scholarly knowledge, mixed with experiences and tales from the indigenous sphere (Olaus Magnus 1972).[5] With his voluminous work, characterised by amazing erudition and references to the country's geography, history and culture, Olaus Magnus (1490–1557), Sweden's last Catholic archbishop, living in exile in Rome, wanted to direct the attention of the European public to the richness and special features of the north and thus stimulate the recatholisation of Sweden. For his portrayal of the animal world, which takes up approximately 300 pages of his *Historia*, he certainly not only exhausted the whole of the literature on the natural world up to Pliny, but was also able to fall back on the experiences he had gained himself as a young man in the service of the Church during extensive travels in the north of Sweden and to Norway in 1518/1519 (cf. Grape 1970, 30–46).

No less than eleven chapters of the 18th book, which concern the forest animals of the north *(De animalibus sylvestribus)*, are devoted to the bear.[6] On the same level as the zoological and economic-utilitarian perspectives (right at the beginning of the section on the bear in Chapter 24 of the 18th book, the significance of polar bear skins as altar decorations in cathedrals is referred to), ideas are assimilated in the *Historia* that appear rather incredible or unreal to today's reader. Thus Olaus Magnus also deals with one of the most popular bear fantasies, namely the belief already mentioned in Pliny's natural history, that bear cubs only win their form and shape by being licked thoroughly by their mother. The ambiguity with which Zedler refutes this assumption in his encyclopedia mentioned at the beginning allows the conclusion that 200 years later a matter of widespread zoological knowledge was still at issue here, although this fable had already been rejected in the 13th century by Albertus Magnus.[7] Olaus Magnus explains the tininess and alleged shapelessness of the bear cubs, in whose case only the claws are developed from the outset, with the she-bear's short pregnancy of supposedly only 30 days (XVIII, 26).[8] According to him, the she-bear gives birth in extreme seclusion – so that a human can hardly ever witness this process – to her five cubs (actually, only one to three) after a seven-day deep sleep, namely either in a cave or under a self-made canopy. During her deep sleep, the she-bear puts on large amounts of fat while she sucks at her front right paw. "Paw sucking",

5 The *Historia Animalium* by the Swiss philologist and naturalist Konrad Gessner (1516–1565), in which the bear also attracts a lot of attention, stems from the same period.

6 Hereafter, the work is referred to by book and chapter numbers, respectively, so that the places in the various editions can be found more readily and make translations easier.

7 Cf. Zedler 1731, col. 114; on the sources about the she-bear and her cubs cf. Foote 1998, vol. 3, 939; in addition: Björklöv 2010, 40–44.

8 A mistake already coming from Aristotle; actually, the female brown bear carries her young for about six months.

through which the bear is supposed to satisfy its hunger during hibernation as well, correlates with a widespread idea that has become associated with the observation that the bear's soles are renewed in February (cf. Foote 1998, 939). Special care is due in the forest on the day on which the bear changes the paw and therefore briefly awakes; this can happen around, for example, Candlemas or on St Canute's Day (13 January; cf. Tillhagen 1985, 142). This is where, in legendary traditions, the motif of the "hunger paws" (sucking on them means rescue from starvation and from dying of thirst for errant hunters) stems from (cf. Paproth 1977, col. 1195–1196). Olaus Magnus's reproductions of popular or scholarly ideas are by no means exhaustive. On the other hand, he often embellishes his sources, which go back as far as classical natural history and are occasionally misunderstood, with details that lend the portrayals a character of authenticity. In this way, he vividly substantiated the topos of the aggressive mother bear. Just as wildly as skilfully, the she-bear kills stags and even bulls which come too close to her cubs, whereupon she shoulders her prey and, standing upright, takes it into the forest to devour it (XVIII, 26).

Of all animals, only the wild boar knows how to resist an attack by a bear with its tusks, and only the hedgehog takes the risk of seeking out a bear's den and is even in the position to kill a bear. Olaus Magnus presumes, on the other hand, that the ferocity of a pack of wolves is one of the reasons why bears hibernate despite their warm fur – their reluctance to leave traces in the snow as well as the harmfulness of ice to the bear's sensitive paws are also considered, but not the obvious fact that the bear, as an animal with a predominantly vegetarian diet, finds no nutrition in winter (cf. XVIII, 27). The phenomenon of hibernation has in fact always fascinated people: In the Nordic imagination, there are often forest maidens and other sprites who provide the bear with food in its cave. The advantage of being able to sleep the cold winter away has been granted to bears by the Virgin Mary, according to a legend documented in Norway and Sweden: The bear carried her on his back over a river whereas the wolf and the horse had refused because they did not have the time (Frøstrup 1989, 36). According to another tradition, it was the Lord himself who rewarded the bear in this way, after the goat and the horse had balked at performing this service because of their constant need to eat (Tillhagen 1985, 150).

The special attention which the mother bear shows her cubs[9] can extend to children, as a later folk memory shows: In Sollefteå (northern Sweden), there was a report of a boy who had got lost in the forest in winter and had survived because he was kept warm by a bear in its cave. Every morning, a forest maiden brought a bowl of milk to the cave. On the day the bear was finally slain and the boy was rescued, there had been blood instead of milk in the bowl (cf. Tillhagen 1985, 143–144). On the other hand, however, an encounter with a bear can prove to be fatal, especially for pregnant women, since the belief – widespread in the north and also noted by Olaus Magnus – that wolves, or rather werewolves, were after the foetuses of women in particular had extended to bears in many areas. Such legends are in a strange, charged relationship with the prevailing ideas about the relations between bears and children; they do not occur in Olaus Magnus's work.

Horses might according to Olaus Magnus escape a bear by fleeing, but would never recover from this fright and were henceforth incapable of joining battle. So it was a popular stratagem to rush against a mounted enemy while wrapped in a bear skin (XVIII, 27). Bears are introduced early by their mother to the pleasure of licking honey. Suffering a lot of bee stings in the process has the positive effect of freeing them from their profusion of blood (XVIII, 28). As bears, as Aristotle knew already, are omnivores, young bears can also try to consume mandrake, which is life-threatening for them (but which admittedly does not occur in the north). They eat ants afterwards as a remedy

9 Actually, infanticides among brown bears are quite common; since bears are polygamous, the male tends to kill cubs when it is not their father; cf. Björklöv 2010, 85. Cf. also Zedrosser et al., this volume, on infanticide among bears.

against the poisoning (XVIII, 28). The protein-rich ants really represent a popular food, especially for she-bears (Björklöv 2010, 91). One of the bear's weak points is its nervousness. If it is hit by the arrow from a hunter's crossbow while it is eating autumn berries, it experiences such a fright that the berries it has just eaten shoot out of its bottom like a hail shower (XVIII, 25; Fig. 1); a bear that is disconcerted in this way is then a relatively easy kill. The bear's most sensitive part of the body is its skull. If it is, while stealing honey, struck by a wooden club fitted with iron spikes, which has been fixed above the source of the honey for this purpose, this means death for the bear. Konrad Gessner, Olaus Magnus's Swiss contemporary, also notes in the first volume of his *Historia animalium* (1551) that even a slight blow to its skull could kill a bear, because the bone there is very thin and brittle (cf. Björklöv 2010, 55).

A sensitive side of the bear which otherwise rarely appears in the literature is demonstrated by its love of music. Shepherds are at times dragged off by bears so that they can play something to them on their bagpipes (Fig. 2). Only when the bear, driven by hunger, sets off in search of food can the shepherd flee and reach safety (XVIII, 31). When Olaus Magnus subsequently shifts to writing about tamed bears from Lithuania and Russia that dance to trumpet music and then demand their reward while holding their hats out to the public (XVIII, 32; Fig. 3), the episode with the shepherd makes it clear that the musicality of the bear is a human trait that the bear possesses from the outset but which is utilised simply for human needs through training.[10] In the north, as in many regions of Europe, the taming of bears has a long history. From the Middle Ages, they provided entertainment at fairs. Moreover, they have been used as guard animals at times (Berg 1965, 93–96).

Olaus Magnus seizes on a large number of bear topoi that the zoological and medical scholarship has had at the ready since antiquity. Skilfully, he links these with information that might stem from Swedish informants he encountered on his inspection journeys. To what extent the literary construct that arose in this way actually reflects the ideas and experiences of broader rural layers of the population about the bear can scarcely be established. Very much in the sense of Renaissance philosophy, Olaus Magnus conceives the natural world and therefore the world of animals, too, as a semiotic system. Animals do not just appear here as zoological entities; as part of the order of creation, they are rather integrated into a complex structure of correspondences, similarities and representations. The apparently naïve anthropomorphisation of the fauna therefore forms no unreflected-popular layer of the *Historia*, as might be believed at first sight, even if it makes use of the wealth of the "popular superstition"; the detection of the "human" in animals is rather an integrating part of the Catholic archbishop's interpretation of the world. In this thinking, animal and human worlds reflect each other well; against this background it becomes understandable why Olaus Magnus devotes special attention to the tradition of the animal bridegroom or rather the bear's son.

The motif of the bear's son

In Chapter 30 of the 18th book, Olaus Magnus relates the story of a farmer's daughter who is dragged off by a bear to its cave. Whereas the bear initially wants to eat her, he is transformed by the sight of her from robber into lover (*ex raptore amator effectus*). In trying to nourish his lover in a befitting manner, the bear causes heavy damage among the farmer's cattle, which is why it is ultimately killed. At this point, the bear has already made the girl pregnant; the fruit of this union proves to be human in form because nature had determined to moderate the eerie that had grown from this "double

10 In the same way, according to Olaus Magnus, the small Öland horse also instinctively starts to dance *humano more* as soon as it hears a string instrument (XVII, 16; cf. Böldl 2007, 28).

material" (*duplica materia*). When the son nonetheless behaves like a bear, this is explicable to Olaus Magnus through the fact that basically the father's characteristics had been passed on, just like all humans were descended from Adam. The son will later avenge his father's death; the Danish ruling dynasty will emerge from his descendants. Olaus Magnus took this story, which portrays a narrative complementary to reports about bears being tamed and therefore incorporated into the human world (cf. Böldl 2007, 132, 134), from the *Historia de omnibus Gothorum Sveonumque regibus* (1554) by his brother Johannes Magnus, but the original source is the *Gesta Danorum* by Saxo Grammaticus, completed around 1215 (cf. Saxonis Gesta Danorum 1931, 287–288).

It is not hard to show in this episode the motif of the bear's son that is widespread throughout the northern hemisphere (cf. Stitt 1992) and which introduces mostly the fairy tale of the three abducted princesses (Aarne/Thompson Index [AaTh] 301, 301A and 301B); this tale also occurs as an independent narrative (cf. Golther 1930/1933b). An English historical source from the Early Middle Ages already mentions a Beorn Beresun whose bear ears are a clearly visible sign of his animal origin. This in turn is substantiated by a story quite similar to one in Olaus Magnus (cf. Edsman 1956, col. 672–673). The motif of the bear's son in storytelling also occurs in legend literature, in most detail in *Hrólfs saga kraka* (cf. Ney, this volume). The bear cub is frequently characterised by hideousness or foulness in the supraregional stock of legends and fairy tales (cf. Panzer 1910, 19). In the Icelandic version, *Bjarndreingur*, the father bear moves out and returns only every four years to remind the mother that the son, becoming ever stronger, is not allowed to leave the house. Finally, however, the bear's son leaves it before the appointed time and unwittingly kills his father, the bear, with a magic axe it had received from him (subsequently the story then follows AaTh 301; cf. Rittershaus 1902, 102–106). The wide geographical dissemination of the motif can be rated probably as an indication of a relatively great age; at any rate, the oldest evidence in northern Europe goes back to the 11th century. A legend recorded in 1755 is supposed to explain the origin of the Sámi "Bear Feast", a ceremonial following a successful bear hunt; since it emphasises – along with other motif-related parallels – a mixed marriage between a bear and a female human, the origin of the bear's son motif has been recognised in archaic hunting rituals (cf. Edsman 1956, col. 672; Ward 1977, col. 1232–1234; Björklöv 2010, 267–272, especially 270–271; cf. also various contributions on the bear ceremonial and the bear's son, this volume).

The bear in the Scandinavian world of fairy tales and legends

Along with narratives about the bear's son, there is also a series of fairy tales in which the similarity between human and bear finds expression in transformation phantasies. One of the best-known Norwegian fairy tales of all, *Østenfor sol og vestenfor måne* (East of the Sun and West of the Moon, AaTh 425), deals with the liaison between a girl and a bear which, however, turns out to be a king's son whose stepmother has cast a spell on him. Unrecognised, the king's son, who strolls as a bear during the day, lies every night next to the girl, until she, in her curiosity, lights a candle and lets three drops of tallow drip onto his robe, which leads to the prince having to return to his stepmother and to marry a troll woman. But the heroine knows in the end how to prevent this, since only she, as a Christian woman, is able to wash the spots of tallow out. The fairy tale shows many alignments with that about *King Valemon* (AaTh 425 A), who also has to adopt the form of a bear during the day due to a witch's spell and would be released only if he is not seen by anybody in human form for seven years. Again the drops of tallow play a role: The heroine sees the prince in his real form, and the escape of the couple from the witch's castle is of course successful this time, too.

The fairy tale of the bear-skin man (*Bärenhäuter*; AaTh 361) also needs to be mentioned in this respect; it is evidenced throughout Scandinavia (cf. Uther I, 2004, 227). The Devil promises wealth

to an impoverished soldier who has been dismissed from service, if he neither washes himself nor cuts his nails for seven years. The hero uses the money to help another man overcome adversity, who consequently promises him the hand of one of his daughters in marriage. Only the youngest of the sisters sees the good heart of the hero behind his repulsive external experience and chooses him as her bridegroom, after which the two others kill themselves out of grief in the end. The connection between this fairy tale and the bear symbolism is vague in many versions or does not exist at all. Thus the hero's hideous external appearance is explained by his work at the Devil's fireplace in the Swedish version by Liungman, representing the motif of "hell's stoker" (cf. Scherf 1995, 48); there is no talk of a bear skin. In the versions in which the hero really slips into a bear's robe at the behest of the Devil, a bear appears – usually during the conversation between the soldier and the Devil – and is immediately shot dead by the hero. This is how it is already told in 1670 by Grimmelshausen, whose story for the first time links the fairy tale type AaTh 361 with a bear motif. This turns up again in the north in, among other things, the Danish version, *Bjørnmanden*, as recorded by Ewald Tang Christensen in 1902. Here it is also present that the Devil sows the hero into the bear's robe, and that he at first spreads fear and terror among the people until they recognise his good-heartedness and helpfulness (cf. Bødker 1960, 52–57). Whether the bear skin motif can be interpreted as a later reflex of Old Norse berserker concepts must remain open in light of the relatively recent development history of this type (cf. Golther 1930/1933a, col. 168–170; cf. Sundqvist, this volume, from the viewpoint of a historian of religion; cf. also Hirsch, this volume). The high incidence of ideas of bears as dressed up or transformed humans does not necessarily allow this connection to be seen as compelling.

As already indicated, the "simple forms" in Scandinavia have not shaped a specifically Nordic bear motif; in most cases, they represent an international narrative. Often the bear is only a cipher for a quarry of especially high-quality. In the legends recorded under E 11–17 of *Types of the Swedish Folk Legend*, a mostly feminine forest spirit promises a man a bear (or an elk) as quarry for the following day, if he provides the spirit with food or tobacco, gives her a shirt to rock her infant with, or calls her by a certain name (cf. Af Klintberg 2010, 100–101). Even if a hunter is willing to move his campfire because it lies on an elven path, he will be rewarded in this way (cf. Af Klintberg 2010, 199 K 181). However, bears indeed appear very often in popular legends, but in no way exclusively in hunting contexts. The special size of giants can for instance be emphasised when a giant child uses a bear as a toy (cf. Af Klintberg 2010, 157). Bears are in a position to drive away the trolls which have settled down on a farm; alternatively, the nuisance guests might be robbers (cf. Röhrich 1977; Uther I, 2004, 79–80; Uther II, 2004, 54–55). The bear proves itself grateful to the human who removes a thorn from its paw (AaTh 156; a motif also known from hagiography, although it is, as for example with St Jerome, associated mostly with a lion, which becomes a faithful companion).

In the funny fairy tale about the Dalecarlians on a bear hunt (*Dalkarlarna på björnjakt,* AaTh 1225), the one of the three companions who dares to enter the bear cave has his head bitten off by its occupant. The punch line of the story comes when the Dalecarlians can no longer remember whether their companion ever possessed a head. This story, handed down in the north and also in Norway and among the Sámi, probably stems from the Orient and is well substantiated in eastern Europe in particular (cf. Uther II, 2004, 80). However, more frequent are the fairy tales in which the bear appears as stupid and gullible, to be usually duped by the fox. In the collection of Norwegian fairy tales by Asbjørnsen and Moe, the stories of bear and fox are grouped in a series of trenchant funny stories (cf. Asbjørnsen/Moe 1982, 479–483). The best known of these fairy tales relates how the bear comes by its stubby tale (AaTh 2): The fox, who arouses envy in the bear with a stolen bundle of fish, recommends that the bear sticks its tail in a hole in the ice and uses it as fishing bait; thereupon the tail freezes solid and is bitten off by the fish. This anecdote is documented for the first time in the *Roman de Renart* (1178) and recorded remarkably frequently throughout Europe (cf. Uther I, 2004, 17–18). In a Swedish version, it is the well of an old women in which the bear tries to fish. The fox be-

trays the bear to the woman, who beats the frozen bear while the fox is able to drink up the woman's cream undisturbed (cf. Liungman 1950, 11). In other fairy tales of this funny type, in which the wolf can from time to time take the place of the tricked bear, the fox is cheated of its proportion of butter, and the bear catches its paws in a trap; the bear is made to eat its own entrails (AaTh 21) or carry the fox. In AaTh 36, the fox rapes the she-bear; in AaTh 37, disguised as a nursemaid, it eats her children (cf. Paproth 1977, col. 1200–1201). Also very popular in the north is the motif according to which the bear gets to grab the fox by the leg after a further atrocity but lets go of it again when the fox convinces it that it is just a root (AaTh 5; cf. Paproth 1977, col. 1200; examples in Asbjørnsen/Moe 1982, 479–483; Liungman 1950, 13). In all these fairy tales, the otherwise so central physical strength of the bear is suppressed or neutralised by its stupidity. Beyond all concrete experience of the bear and related mythical-religious concepts, it is reduced here to the representation of a certain (inferior) mental disposition which finds its expression in the dealings with a certainly physically weaker but intellectually superior animal. However, a fable in the *Dialogus Creaturarum Moralizatus*, the first book printed in Sweden (1483), certainly forms a remarkable exception to this. Here it is for once the bear that cheats the wolf. It suggests to the wolf to look after him in its cave during the winter, if the wolf in return feeds it throughout the summer. Thus the bear spends a peaceful summer, but in the winter cave, the bear has nothing to offer the wolf but sucking the bear's paws (cf. Björklöv 2010, 369–370). The moral of this story is not absolutely evident. Apparently, it is about being careful in choosing your friends.

In summary, it can be recorded that the bear takes a special position above all other animals in the perception of the inhabitants of the northern hemisphere, as can be seen in popular beliefs as well as in legend and fairy tale literature in extraordinarily complex and varied bear semantics. Two factors seem to be decisive for the not unfrequently also contradictory popular image of the bear: On the one hand, the frightening size and strength of this "king" of the animals, which led to various taboo ideas and – in earlier times – also to a religious exaltation, and on the other hand its "human-like" form which makes it into a projection surface for the most varied and also all too human characteristics, which span from knowledge of healing, love of children and musicality to credulity and clumsiness. The long journey from the demonic and life-threatening ruler of the forests to the teddy bear (certainly also one of the popular manifestations of the bear) is undoubtedly of great interest for the history of mentality.

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Fig. 1. If a bear is hit by the arrow from a hunter's crossbow while it is eating autumn berries, it experiences such a fright that the berries it has just eaten shoot out of its bottom. A bear that is disconcerted this way is then a relatively easy kill (after Olaus Magnus, Historia de gentibus septentrionalibus *[Antverpiae 1558], XVIII, 25. © Augsburg, Staats- und Stadtbibliothek Gs 6098, digitalised by the Bayerische Staatsbibliothek / Bavarian State Library. MDZ Digitale Sammlungen).*



Fig. 2. The bear's love of music leads to it dragging shepherds off, who play something on the bagpipes to it. Not until the bear goes looking for food can the shepherd flee and reach safety (after Olaus Magnus, Historia de gentibus septentrionalibus *[Antverpiae 1558], XVIII, 31. © Augsburg, Staats- und Stadtbibliothek Gs 6098, digitalised by the Bayerische Staatsbibliothek / Bavarian State Library. MDZ Digitale Sammlungen).*



Fig. 3. Tamed bears from Lithuania and Russia dance to trumpet music and then demand their reward while holding their hats out to the public. The natural musicality of the bear is utilised merely for human needs through training (after Olaus Magnus, Historia de gentibus septentrionalibus *[Antverpiae 1558], XVIII, 32. © Augsburg, Staats- und Stadtbibliothek Gs 6098, digitalised by the Bayerische Staatsbibliothek / Bavarian State Library. MDZ Digitale Sammlungen).*

Killer bears and bear killers in 19th-century Sweden

By Karin Dirke

Keywords: Bear hunting, northern Europe, Herman Falk, Llewellyn Lloyd, human-animal studies, animal agency

Abstract: The chapter discusses encounters between bears and the two 19th-century hunters Herman Falk and Llewellyn Lloyd. By taking both the hunter's and the bear's perspective into account, the 19th-century ambivalence towards hunting in general, and large carnivores in particular, is highlighted. Different forms of hunting have been categorised by anthropologist Garry Marvin, and this chapter utilises, as well as questions, these categories. From the bear's perspective, hunting was probably experienced as traumatic and destructive. On the other hand, hunters also built relationships with individual animals, thus gaining knowledge about bears. A hunt sometimes went on for hours or days. The particular animal hunted may have been hunted before, and was known to the hunters. This allowed the hunters to gain a nuanced picture of the animals and to understand their lives. In this way, the perception of the bear grew from experiences that were shared by hunters and bears. Eventually, this alternative view of the bear entailed the relative protection of the animal in Sweden.

Introduction

What happens if we think about bears and humans as two equal parts in the construction of Scandinavian hunting narratives and practices? As an effect of Cartesian dualism, animals have been viewed as objects in the western world, as lacking both agency and intentionality. This has resulted in an ignorance of the animal's perspective. This paper instead aims to discuss how ideas about bears in hunting literature and zoology grew from a shared experience of encounters between humans and bears, how they are constructed as entangled with each other, and how they influence one another in narratives about hunting.

What did the hunter know about the bear? Folklore and experience seem to point towards a tacit knowledge to which the bear itself contributes. What does this mean for ideas about bear agency, and how has it led to the protection of the bear in Sweden? The story circles around two bear hunters in 19th-century Sweden, and the bears they encountered and wrote about.

Bear hunters

Two prominent bear hunters, Herman Falk (1785–1865) and Llewellyn Lloyd (1792–1876), published works on bear hunting in the first half of the 19th century. Both shared their knowledge with the Swedish zoologist, Sven Nilsson (1787–1883). The three men were interconnected and frequently

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 863–874 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134367

referred to each other's work. Falk was a professional bear hunter, and, as a royal forester, it was his obligation to organise bear battues (Fig. 1). The task was to arrange large numbers of people in a search party, driving the bears towards the hunters. The operation required knowledge and skill, concerning both the organisation of large numbers of people and experience in the behaviour of bears. As a former military man and a skilled hunter, Falk had both. In 1819 he published instructions on how to organise large bear hunting parties, and in 1828 this booklet was revised and republished.

Llewellyn Lloyd was an English nobleman, who during the 1820s and 1830s travelled in Sweden and Norway, hunting, fishing, and publishing travel accounts and hunting stories about his experiences (Fig. 2). His independence of means made this possible, and the threat of being charged of accidently shooting a forester while poaching in his home country encouraged him to travel. Lloyd participated in Falk's hunting parties, but also hunted bears in different ways, individually on skis, and with groups of local people. Falk instructed Lloyd on how to conduct effective bear hunting, and Lloyd frequently referred to Falk's knowledge about bears and hunting. Lloyd published several books about his travelling adventures. Mainly, they consisted of hunting and fishing stories, but they also included accounts of ethnographic observations. The books were published in several editions in English and were also translated into Swedish. The writings of these two hunters are the main source material of this study.[1] Thus, the behaviour of the bears is interpreted through an analysis of the words of their killers.

Killing animals

The relationship between the hunter and the bear revolves around the death of the animal. It is the explicit aim of the hunt, and the fear of death or injury is what primarily drives the bear's behaviour. To understand these hunters and their relationships with the bears, we thus need to understand the meaning of hunting in the 19th century. Anthropologist Garry Marvin has discussed how hunting can be defined and understood as a cultural and social pursuit. Hunting, of course, involves the killing of animals, but not all animal killing is hunting. What then distinguishes hunting from other forms of killing or interaction with animals? Marvin suggests two types of killing, domestic and wild. Domestic killing is not hunting, but is characterised by its purposefulness. There is no possibility for the animal to escape. Domestic killing can be of two types, cold and hot. Cold killing is when the animal is taken from its original space to be killed in a special place by professionals. The killing is highly mechanised and/or medicalised, and it is performed by professionals with no relation to the individual animal. This is what happens in the meat industry, or when pet animals are euthanised (Marvin 2006, 12–17).

What Marvin calls hot killing is instead when pest animals are killed. This process is not categorised as hunting but rather extermination or annihilation. It is done by professionals, but, contrary to the cold killing, this form requires the professional to have a relationship with the animal. The killer seeks out the animal in its habitat and is therefore required to establish some kind of relationship with it. The motivation for much 19th-century bear hunting was that of pest extermination. Large predators were relentlessly hunted, and authorities encouraged people to kill them. But when a large amount of people – sometimes several thousands – were gathered to drive the animals it was still considered to be a form of hunting, even though the purpose was to free the area of large predators (Marvin 2006, 17–18).

1 I have also discussed Falk and Lloyd in another paper about hunting narratives; see Dirke 2017.

Sport hunting fits into the second category: wild killing. This is when the hunter enters the space of the wild animal to kill it. The animal will not easily comply, and the hunter needs skill and knowledge to be successful. A close relationship with the prey animal is thus required. Wild killing is done by non-professionals for enjoyment (Marvin 2006, 18); the relationship with the animal can be emphasised. The hunter may express a kinship with the animal and describe it as an equal opponent.

Hunting, as it is defined by Marvin, is considered to be an entirely cultural process. Claims – mainly from a pro-hunting perspective – that hunting is a human's natural predation on other animals are refuted by Marvin with the argument that hunting requires planning and premeditation, which supposedly sets it apart from animal predation. Hunting by humans is therefore a highly organised and ritualistic endeavour. Marvin underlines the nature/culture-divide in order to argue for the specificity of hunting. He highlights how hunting by humans is a cultural endeavour, whereas hunting by animals supposedly is not. Hunting by humans mimics animal behavior – such as tracking and killing – but is really not the same, according to Marvin. He states, with reference to Tim Ingold, that animals only start the behaviour of predation when a prey is about (Marvin 2006, 12–14).

Yet, the question remains: How do we know an animal lacks premeditation when it sets out to hunt? Why should we make our categorisations dependent on a constructed division between culture and nature? Further, the 19th-century bear hunters do not fit perfectly into Marvin's categories. The categories need historisation in order to describe 19th-century hunting practices, when bear hunting was *both* sport hunting and pest extermination. The dual nature of the hunt seems to reflect the ambivalent perception of bears. Marvin's definition of hunting is useful to shed light on the ambiguities and complexities of human-animal relations, but needs to be nuanced when applied to historic source material.

In this chapter, my approach is to use Marvin's categories, but to investigate hunting without taking the constructed divide between nature and culture as point of departure. Hunting is undoubtedly a cultural practice; however, I think we need to accept that we do not know what the animal is thinking when it sets out to hunt. We can also state that what takes place between human and bear in the practice referred to as bear hunting is something quite different from the bears' perspective. Further, we cannot assume that bears were the same in the 19th century as they are today. How do we set about investigating hunting when all we have is source material left by humans? Hunting is, as Marvin shows, a very relational business. It is performed as an interaction between hunter and prey. Both influence the hunt and its outcome. How can hunting be understood if we also acknowledge the bear and its (involuntary) participation in it? Thus, I intend to discuss bear hunting during the 19th century in the light of Marvin's categories, but also by taking the perspective of the bear into account.

The bear killer's understanding of bears

Bears were prized hunting objects. One reason for hunting bears was that they damaged livestock. When a bear had killed cattle or sheep it was the owner's right to report this to the governor, who would arrange a chase. People from all around the county turned up to join the search party. Some of the hunts described by Falk and Lloyd are of this variety – "hot killing" in Marvin's terms. Bears were described as a great threat to farmers and their livestock. Falk complains in his book about bear hunting that commoners do not participate enough in extermination efforts. "Those who are affected by the damage done by bears complain, but rarely contemplate the measures required to free the area of these slaughterers and crop destroyers", he declares (Falk 1828, 21, author's translation from Swedish).

Written sources from earlier centuries speak of different types of bear, mainly a larger killer bear and a smaller grass bear. It was therefore debated whether the varieties belonged to the same species

(Berch 1750, 13; Orrelius 1750, [no page number], 3; Brummer 1789, 35). Falk concluded that both he and Lloyd had never encountered more than one species of bear in Sweden (Falk 1834, 1138). However, the idea of a larger and more dangerous killer bear was ubiquitous. Bear killing was thus always motivated by the damage done by killer bears. Underlining the argument for killing bears was a moral obligation. Slain cattle (killed by someone other than the humans themselves) required retaliation in the form of community bear hunting (Fig. 3).

Bears were also hunted because of their size and assumed fierceness. In Sweden, as elsewhere, the bear was considered an impressive object to hunt. Sport hunters were interested because of the thrill of killing a dangerous animal. Falk bluntly asserted in his accounts of dramatic bear hunts in a hunting journal that only risky and eventful hunting operations were worth narrating (Falk 1834, 1145). One can thus conclude that hunting accounts generally provide an exaggerated view of the aggressiveness of the bears. Early on, bear hunting became linked to ideas of dramatic battle or heroic warfare. Together with the elk and the reindeer, the bear was the megafauna of Scandinavia in historic times and thus especially interesting to hunt. Humans seem universally inclined to kill large animals, making them overrepresented in extinctions. Everywhere humans have been present, large animals have, to a greater extent, become extinct (Svenning 2017). Bears were no exception and, during the 19th century, the population of bears in Sweden was heavily decimated (Danell et al. 2016, 217). Both Falk and Lloyd enhanced the size and fierceness of the animals in their stories.

Hunters during the 19th century did not differentiate when hunting bears of different age or gender. Males, females, or cubs could be hunted at any time and in any place, and hunting stories were commonly aimed at exaggerating the boldness of the hunter. Therefore, size, fierceness, and dangerousness of bears were often emphasised. Large bears were thus more attractive to hunters, and bears were often described as large. The killing of a large bear attracted attention. The size of the bear was always mentioned, and especially highlighted if it was a big one (Fig. 4).

Hunters tried to visualise the size of the animals in writing, even if it was not possible to weigh or measure in any other way. Lloyd tells us that a significant bear was shot by one of Falk's men; its fat would apparently have weighed 100 *marker* (1 *mark* = 212.5 g), and the circumference of its wrists was larger than the hunter could reach with both hands (Lloyd 1831, 33). On another occasion, Lloyd measured a killed elk with a string. Unfortunately, however, he later lost the piece of string from his pocket (Lloyd 1831, 279).

The gender of the bear was often of secondary importance. It was frequently mentioned, but the gender could be transformed within a story. Lloyd describes a female bear, who had been bereaved of her cubs earlier the same day. Despite this, the bear was referred to as "he" as soon as it attacked (Lloyd 1831, 101, 164–165). The gender of the bear was obviously linked to its behaviour rather than to its biology.

Falk's hunting instructions

However, when discussing how a bear should best be caught and killed, it was not its fierceness but rather its fear that was brought to attention. Falk demonstrated a great knowledge of bears, what scares them, and how to handle them. A frightened bear is dangerous. Therefore, much of Falk's instructions were aimed at keeping the bear calm. Bears could be shot in their winter dens, by silently seeking out their resting places. Falk teaches that, to catch a bear, it is necessary to walk quietly through the forest, noticing every scratched tree or other sign of bear. Scratch marks in the moss or broken spruce twigs will reveal the presence of the bear's winter quarters. If one finds the den, Falk instructs to leave it untouched, or the bear will move far away (Falk 1828, 22). Later, the hunter would return and attack the bear in the den.

Bears could also be hunted by large hunting parties during the summer, when great numbers of people were summoned to drive the bear. The goal was to, slowly and carefully, move the bear towards the hunters to enable them to shoot it. A circle, of sometimes hundreds of people, gradually drove the bear towards its execution. The bear was driven to the *skallplats*, a prepared open space, where it was killed. When the battue is beginning to close, Falk explains, the bear "shows itself" (Falk 1828, 7). The wording implies agency of the bear, but the reason for the bear to become visible is probably rather the stress the chase is causing; the bear may have been driven for hours or days. Uneven or bent lines of people are dangerous in the operation. If the bear enters such a bend it is almost impossible to keep within the line of people, according to Falk, because it comes too close to the humans. The lines of people have to be kept at such a distance that nobody risks being shot by the hunters or attacked by the bear, and at the same time close enough to keep the bear within the circle. During the hunt, the bear should always be kept at a distance of at least forty feet, otherwise it will easily break the line. In any disagreement with a bear, it is important to always be the aggressor, Falk declares. The grimmest bear will withdraw when directly attacked, but, if it is given time to strike first, it will break through any obstacles (Falk 1828, 24). The bear is, according to Falk, very reluctant to attack humans. It will only do so if it is forced to defend itself (Falk 1834, 1141).

The battue will certainly encircle all animals in the forest, but bullets may, according to Falk's instructions, only be fired at bear or wolf during the chase. Any other animals should be killed with clubs or spears (Falk 1828, 11). The difficult task was to hold the bear within the circle. Therefore, silence was necessary. If the bear was frightened, it would break the line and get away. It is of the essence to remain completely quiet unless the bear tries to escape, Falk explains, in which case intense noise must be made. At the moment the bear turns back, the people must be silent again. This way the bear is kept within the circle of people (Falk 1828, 12).

Communication with the bear was thus an important aspect of the hunt. The hunters were required to remain very attentive to the bear and to quickly respond to its behaviour. The hunt, Falk stated, should take place in the forest where the bear can find places to hide. If it is held in the open fields, the bear will easily panic and break through the line (Falk 1828, 13). Thus, the hunter primarily had to be aware of the timidity of the bear, and much of the chase was targeted on avoiding frightening the bear. The bear's behaviour was closely observed. The hunters emphasised the importance of knowledge about the bear in order to kill it, underlining the reciprocal characteristic of wild killing in Marvin's vocabulary.

For instance, both Falk and Lloyd noted (though confusing hunting or fighting with defending oneself) the bear's different combat methods. They wondered at the observation that the bear seemed to attack cattle with its front paws, while biting humans. Lloyd concluded that this is lucky since the power of the bear's strike could easily kill a human (Lloyd 1831, 33). More likely, the perceived difference in how bears attack is due to the fact that bears attack cattle as prey, but defend themselves against humans. Falk and Lloyd, however, considered all encounters the bear engaged in as a battle or warfare. For the bear, on the other hand, there was most likely a great difference between hunting for prey itself and attempting to defend itself against an aggressor. According to Falk, some speculate that the human is special, singled out by divine providence to be spared by the bear, and therefore the bear uses different strategies when attacking. On the contrary, Falk thought human dominance to be the reason for the bear refraining from using its paws when charging (Falk 1834, 1138).

The idea of the human as the dominant force was self-evident to both Falk and Lloyd. The bear hunters described the hunt as a form of legitimate warfare. Hunters chased the bear in a justifiable act of combat, in defense of livestock. The thought of being constantly at war with the bear was necessary for the legitimacy of this idea. The bear was described as a worthy opponent, powerful but deserving. Falk's way of hunting (in the form of large battues) in particular was closely linked to warfare and had its roots in 18th-century military strategy (Nyrén 2012).



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

Fig. 1. Herman Falk (portrait from Svenska Jägareförbunderts Nya Tidskrift 1868, 190).

Fig. 2. Llewellyn Lloyd (portrait from Svenska Jägareförbundets Nya Tidskrift 1875, 119).

Fig. 3. This bear was killed, not by Falk or Lloyd, but during another hunt in Ångermanland in the north of Sweden, after having been followed for six days. It seriously injured two of the hunters before it was finally shot by a hunting party led by the local forester Wallroth (after Svenska Jägareförbundets Nya Tidskrift 1865, 129–134, picture on page 128).

Fig. 4. Lloyd being attacked by a bear, but saved by his companion Jan Finne (after Lloyd 1831, unpaginated).

Fig. 5. The bear illustrating Falk's instructions on how to kill bears looks weary and suspicious rather than aggressive and bold (after Falk 1828, title page).



Fig. 5.

At the same time, however, Falk and Lloyd (as well as the zoologist Sven Nilsson) described the bears as not being particularly prone to attack livestock. It is only when the domesticated animals themselves provoke the bears that the bears attack, they argued (Falk 1828, 27; 1834, 1138; Lloyd 1831, 28; Nilsson 1847, 199). The idea of the bear as a threat to both livestock and humans fits into the framework of domestic killing, of eradicating the bear. The emphasis on knowledge and a relationship with the bear, however, reveals other sides of the animal. It also appears as frightened, shy, and not particularly aggressive to the meticulous observer. Thus, both bear hunters displayed ambiguous ideas about the animals they hunted. Bears were, in the hunters' view, aggressive, threatening to livestock, large, and fierce, but at the same time fearful, placid, and possible to communicate with.

The bears

Who were the bears being hunted by Falk, Lloyd, and other hunters? We can collect zoological and ethological information about bears, but we cannot be entirely sure that bears in the 1820s were the same as bears today. Therefore, we need to understand the particular bears being hunted in the accounts and take note of who they were and how they appear in the texts. Being heavily hunted – bear hunting did not decrease in Sweden during the 19th century – bears probably went out of their way to avoid humans. Hunting rights had changed in the generation before Falk and Lloyd walked the woods. From 1789, commoners were given the right to hunt for game on their own land (previously this had been the privilege of nobility and royalty). How this actually changed the hunting pressure on game animals is unclear. Since long before hunting rights were granted to commoners, there was consensus about the reasons for the decimation of wild game: poaching, hunting, and predation by large carnivores (Nyrén 2012, 114). Poaching, though difficult to estimate, seems to have been ubiquitous (Nyrén 2012, 168), and all people were also obliged to exterminate large carnivores (Bergström et al. 2015, 58). Bears, thus, were continuously exposed to violent attacks from humans.

The bears in Falk's and Lloyd's stories, as we have seen, seem very violent and aggressive. Falk, however, states that he only tells us about bears that put up a fight. Bears that simply die are not worth mentioning (Falk 1834, 1145; Kheel 2008, 84). The first bear to be awarded some sort of agency in Lloyd's account is one whose skull was kept by Lloyd. It was, according to Lloyd, shot by Falk and was found to be so large that ten people could only carry it a short distance. The bear put up a worthy fight and did not die without bravery, according to both hunters. Lloyd referred to Falk's account of the event: "He did not die tamely, for, after receiving several balls, he dashed at the cordon of people who encompassed him on all sides, and, according to the same author, severely wounded no less than seven of them in succession. […] One of the men he bit in thirty-seven different places, and so seriously in the head, that his brains were visible" (Lloyd 1842, 97).

The animal was later shot by Falk (Lloyd 1831, 32–33). The making of a good story required the bears to be portrayed as vicious and dangerous. Bear hunters were most often remembered by the number of bears they had killed during their lifetime. In a similar manner, bears were remembered by the amount and precise descriptions of wounds they had inflicted upon their persecutors.

In his writings, Lloyd talks about a bear battue he joined in Dalarna, inland Sweden. Two bears had been seen to kill three horses; thus, a chase was ordered by the governor. One of the bears was described as particularly murderous. He could be recognised by a missing claw on his front paw and was in this way portrayed as an individual. According to Lloyd, approximately 1,500 people joined in the search party (Lloyd 1831, 39–40). The event was accounted as dramatic and purposeful; however, when the bear was spotted, Lloyd described him as "the friend" (Lloyd 1831, 43), and displayed affection for the bear. The position of the hunter is ambivalent, oscillating between the one-sided

extermination of the bear, and the knowledgeable wild killing by the sports hunter, who is relating to the bear. Lloyd was suddenly surprised by a bear cantering by him, the story went, but he failed to shoot, not expecting the bear (Lloyd 1831, 47). When another bear was spotted by Lloyd it was not described with contempt, as an animal worthy of extermination, but with admiration: "A bear appeared with his head lifted high and with a proud appearance, fiery and brave like a warhorse" (Lloyd 1831, 47, author's translation from Swedish).

The animal was shot at, and, by the murmuring noise he made, Lloyd assumed he was wounded. According to Lloyd three bears were shot at the battue, one male and two females, the one Lloyd shot presumably being the male (Lloyd 1831, 48).

Again, the bears killed were described by Lloyd as being very large. They were assumed to be male, and they were killed after a long hunt. Another bear hunt described by Lloyd was, according to the hunter, a large organised battue. In his writings, he speculates about the cost of having such large amounts of people in comparison with the profit won from killing the bears (Lloyd 1831, 51), implying a vague, and otherwise quite rare, critique of bear hunting.

The operations described in the stories by Falk and Lloyd indicate highly stressed bears. Their cantering through the countryside and their aggressiveness are indicators of how hunting influenced the bears (apart from the ones actually being killed). As noted, bears had, and still have, a reputation for being aggressive and fierce. This idea generally stems from people observing bears while hunting them (Bradshaw 2017, 54). Lloyd seems to have understood this. From his other writings, a different view of large predators emerges. He describes how young girls and boys guard livestock with nothing but a stick and a birch-bark horn to scare bears off (Lloyd 1871, 133–134). According to Lloyd it was unheard of that bears attack children herding animals. Bears can be dangerous, he concludes, but only rarely if left undisturbed (Lloyd 1831, 98). When the bear is left in peace and is not followed by cubs, it will not attack. But if it is hurt or bothered, it will not back down (Lloyd 1831, 101).

Again, a dual perception of bears can be observed in the writings of the bear hunters, Falk and Lloyd. They described bears as dangerous and violent, but simultaneously as friends, placid souls, and admirable combatants (Fig. 5). The view of the bear was ambiguous, wavering between the violent contester of the noble huntsman and the placid inhabitant of the wilderness.

The extent of bear hunting, the large search parties involving sometimes thousands of people, the shots being fired at bears, sometimes hitting and wounding the animals, must have had an effect on the bears' minds. Lloyd claimed that, in wintertime, bears can be shot with several bullets without dying since shots in empty intestines do less harm (Lloyd 1831, 191). Bears were thus continuously chased, stressed, wounded (and killed) in Swedish forests during the 18th and 19th centuries. In a dissertation from 1750, it was noted that it was rare to come across bears that had not previously been injured by hunters (Berch 1750, 13). The number of inflicted injuries is hard to estimate, but was probably high. It is likely that this had an effect on bear welfare and behaviour. Recent observations on rescue animals indicate the damage that trauma does to animals, as well as humans, across generations. Stressed, wounded and traumatised bears are less capable of taking care of their offspring and upholding normal social relations within and across species (Bradshaw 2017, 79–82).

Further, recent ecological research points towards fear as a universal factor producing vigilance among animals. Fear truly has an impact on wildlife ecology (Laundré et al. 2010). Certainly, the bears' fear must have had an impact on the ecology of 19th-century Sweden, but to what extent is difficult to know. Research has shown how large carnivores change their behaviour significantly in response to fear of humans, whether they are in sight or in hearing (Ordiz et al. 2012; Suraci et al. 2019). It is not far-fetched to conclude that the relentless persecution of bears performed by Falk, Lloyd, and other bear hunters profoundly affected the bears, resulting in a traumatised population of large predators for generations to come.

Conclusion

Marvin's categorisation of different modes of killing is very useful in order to refine the ways we understand hunting. The categories are, however, somewhat inflexible when used in a historical context. In what category would one place the activities of the 19th-century bear hunters? Falk was certainly a professional bear killer with the obligation to exterminate bears as pest animals. He was called out when livestock had been killed by bears, and he argued that his bear killing was warranted by this (Falk 1828, 21). His companion in bear hunting, Llewellyn Lloyd, was a non-professional bear hunter looking for hunting opportunities and adventure. He explicitly justified the killing by referring to the damage the bears did to farmers' livestock, but at the same time expressly enjoyed the task. Hunting stories as a genre also had a logic of their own. Good stories, in the form of violent and adventurous accounts, were preferred, giving the perception of the bears a certain bias.

The hunting stories were filled with aggressive, attacking, and fierce bears. At the same time, another view of the bear was provided. It was also presented as a vigilant, fearful, and stressed creature. This twofold representation of the bear points towards a changing relationship between humans and bears in 19th-century Sweden. The hunting literature was aimed at inspiring hunting and legitimising hunting practices. At the same time, the very need for motivating narratives points towards another view of the bear.

Bears were hunted and relentlessly killed in 19th-century Sweden. At the same time, the writers of hunting narratives expressed a certain ambivalence towards the bear. In the eyes of the bear, they could also see a respected creature, a weary and frightened individual. Falk himself expressed this ambivalence when he stated that the bear is a majestic animal, which evokes both fear and awe, and which, despite its predatory rampage and crimes, should not be hunted to extinction. If one gets to know the bear, Falk concluded, one finds it worthy of protection (Falk 1834, 1137). When gaining knowledge about the bear, the hunters also built relationships with individual animals. The hunt sometimes went on for hours or days, and the particular animal may have been hunted before and was known to the hunters. This allowed them to gain a nuanced picture of the animals and to understand their way of life. In this manner, the perception of the bear grew from a shared experience of hunters and bears. Eventually, this alternative view of the bear entailed the relative protection of the animal in Sweden.

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From monster to endangered animal: Three bear stories by Selma Lagerlöf

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Keywords: Bears, animals in literature, Selma Lagerlöf, Giorgio Agamben

Abstract: By the end of the 19th century, the bear was on the verge of extinction in Sweden. A growing opposition to the state's bounty for bears emerged, and several authors wrote stories about bears. Selma Lagerlöf's three bear stories cover the whole range of ways they were perceived by humans – from the bear as a mythical, dangerous animal, to the bear as man's neighbour in the Christian sense, to the bear as an endangered species. Up until the Middle Ages, the bear played a role in various cults throughout the whole of Europe. In the Nordic region, these cults continued for much longer. When Lagerlöf opens up the mythical as well as the religious and moral domain of the bear, it resonates with the long, ancient relationship humans have had with the bear.

Introduction

In the Nordic countries, the bear can, like no other wild animal, be traced in ancient folklore, folk tales, mythic imaginings of shapeshifting, place names, and linguistic expressions. Representations of bears are found in the heraldry of the nobility as well as on the coats of arms of cities and regions. The bear's unique place in Nordic culture is also evident in its recurring presence in literature. In *What Animals Mean in the Fiction of Modernity,* Philip Armstrong has pointed out that the way animals are understood and treated by humans should be considered in relation to the ways we feel about them, and in doing so the study of fiction has a special role to play: "Literary texts testify to the shared emotions, moods and thoughts of people in specific historical moments and places, as they are influenced by – and as they influence – the surrounding sociocultural forces and systems" (Armstrong 2008, 4).

In Sweden, bears had been hunted mercilessly since the late 18th century, based on a national extermination policy. When the new Swedish national hunting statute was passed in 1864, it was decided that the extermination of all the large predators – such as bear, wolf, wolverine, and lynx – should be intensified, and, accordingly, the bounty was increased tenfold. It was a successful policy: by the end of the 19th century, the bear was almost extinct.

What seemed a desired achievement in the 19th century would take on a different meaning at the dawn of the new century. When the bear was finally threatened by extinction, a greater opposition to the state's bounty on bears and its devasting effect emerged. In 1905, the Royal Academy of Science argued that the bear had to be protected, as so few bears were left that reproduction could no longer take place. According to the law on national parks from 1909 it was then forbidden to hunt bears, and in 1916 King Gustav V issued a ban on the cruel tradition of bear-dancing (Tünaydin 2013, 53).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 875–886 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134368

Lagerlöf's three bear stories

Once it was on the verge of extinction, the bear seems to have spurred the cultural imagination in new ways, and several Swedish authors, among them Nobel laureate Selma Lagerlöf, wrote stories about bears at the *fin de siècle*.[1] Lagerlöf wrote three stories about bears. One is a chapter in her debut novel *The Story of Gösta Berling* (*Gösta Berlings Saga*) from 1891 (transl.: 1898), one a short story "The Truce of God" ("Gudsfreden") from 1899, and the last one a chapter in *The Wonderful Adventures of Nils* (*Nils Holgerssons underbara resa genom Sverige*) from 1906/1907 (transl. used here: 1913).

Lagerlöf's stories take place in the intersection of three, quite different, discourses about the relationship between bear and human. The first is the fear of the bear as predator, a monster with werewolf-like features. The second is the tradition from the bear cults with the importance of showing respect towards the bear. And the third is the post-Darwinist insight that man and animals are related, combined with an animal-rights perspective of the bear as an endangered species. These short stories represent a wide range of approach in relation to the bear, ranging from the bear as a dangerous animal of almost mythical proportions, over the bear as man's neighbour in the Christian sense, to the bear as a civilisation-critical being who understands that human modernity involves its own extinction.

Lagerlöf's bear stories differ from those of her contemporaries in that they make the bear the protagonist and a moral agent on the same level as humans. Even though Lagerlöf is ahead of her time with her awareness of the threat to the bear, her texts also reflect a general change of attitude in Sweden. They therefore bear witness to a change in the national attitude towards the bear at the turn from the 19th to the 20th century. In this article I will argue, through a reading of Lagerlöf's three bear stories, that she not only criticises the extermination politics, but actually problematises the anthropocentric paradigm and depicts the bear as a moral agent equal to humans.

Bear ceremonials and the bear in Christian tradition

Over a broad area of northern Scandinavia, stretching from northern Norway to Sweden and Finland and into Russia, indigenous peoples, such as the Sami, practised similar sorts of bear worship, where the hunting of the bear was regulated through a series of ritual events that were distinguished by the importance of showing the bear respect (Rydving 2010, 34; cf. reprint: Rydving, this volume). It seems that these cults did not spread outside the Sami (and Finnish-Karelian) culture. According to Olle Sundqvist, the bear was not a holy animal in the north, as far as can be ascertained from the written accounts (cf. Sundqvist, this volume). According to Juha Pentikäinen, the "specific knowledge about bear rituals comes from the south Scandinavian Sámi. According to Randulf, writing in 1723 on the basis of information relating to the southern Sámi, 'the Sámi consider all animals holy', and he continues: 'but the bear they consider the most holy of all'" (Pentikäinen 2015, 3).

In his book *Golden King of the Forest* Juha Pentikäinen writes about the Sami that there was an "unspoken agreement about what responsibilities pertained to each side" (Pentikäinen 2007, 44). The bear had to refrain from killing people, and they, in turn, had to honour the bear; they could kill it, but "only within a framework derived from rules established in myth, and with leave granted by the bear itself" (Pentikäinen 2007, 44). In Finland, the traces of these bear ceremonies are also very tangible among the non-Sami population, and several songs in the *Kalevala* are today considered

1 Pelle Molin, Alfhild Agrell, and Helena Nyblom also wrote short stories at the *fin de siècle* ridiculing or criticising bear hunting, and stories where the bear plays a central role.

to be songs that were sung or read over the dead bear. The ceremonies were often called "the bear's funeral feast", or "the bear's wedding" (Pentikäinen/Poom 1999; Björklöf 2010; cf. Piludu, and Keinänen, this volume).

In his book *The Bear: History of a Fallen King* the French historian Michel Pastoureau argues that the Church struggled for over a millennium against bear cults: "Almost everywhere, from the Alps to the Baltic, the bear stood as a rival to Christ. The Church thought it appropriate to declare war on the bear, to fight him by all means possible, and to bring him down from his throne and his altars" (Pastoureau 2011, 3). This struggle against the bear took several forms, such as the demonisation of the animal, or the replacement of sacred spring rituals with Saints' days and church festivities. By the mid-13th century, the de-throning of the bear was complete, according to Pastoureau (2011, 167). The Church's struggle against the bear was connected to both older bear cults and the close resemblance between bear and human. It is noteworthy, Pastoureau continues, that in the bestiary of the seven major sins, the two animals considered closest to humans, bear and pig, are the most devalued. Too close kinships with animals seem to have been unbearable and were compensated for by devaluation and, in the case of the bear, extermination (Pastoureau 2011, 184).

In medieval bestiaries, the bear became connected to vice. Animals did not commit sins; they were imperfect creatures and fundamentally vicious. When, during the 13th century, the vices merged into the form of the seven deadly sins, as opposed to the seven virtues, each sin and virtue was associated with a certain number of animals. Lion, eagle, and horse were associated with virtue, whereas bear, fox, monkey, pig, and dog were always connected negatively with sin. But worst of them all was the bear, who was associated with five out of the seven deadly sins; lust, anger, gluttony, envy, and sloth: "From the thirteenth century, he was the star of this hateful bestiary, a sad fate for a wild animal who was once the king of the beasts" (Pastoreau 2011, 183–184).

The humiliating bear-dancing also commenced during the Middle Ages. Bear-dancing, with bears in chains and muzzles, was common throughout the whole of Europe up to the early 20th century and can be seen as a continuous tradition of humiliating the bear. Being the only four-legged animal that is also a plantigrade (putting down the foot heel first) – like humans –, the dancing bear becomes uncannily like a human in chains when moving on two legs (Tünaydin 2013, 52). Pastoureau points out that the Church, even though they condemned spectacles, tolerated dancing bears but looked down on the bear handlers, something that in turn made the bear an even more despised animal: "Associating the bear with them therefore effectively helped to devalue the animal and, therefore through a kind of osmosis, to project onto him all the vices imputed to his masters and companions in misfortunes" (Pastoureau 2011, 172–175).

The relationship between humans and animals in the latter part of the 19th century cannot be grasped without also taking into account Darwin's tremendous influence on thinking, with his conclusion in *The Descent of Man*: "The difference in mind between man and the higher animals, great as it is, certainly is one of degree and not of kind" (Darwin 1871, 105). Although Darwinism, on one level, was the most radical philosophical challenge to anthropocentrism, it did not have that effect. Instead, the notion of evolutionary development, from the primitive to the more evolved, could be used to create a difference between animals and humans, and also between people. Although man was an animal, he was at the top of the hierarchy, and the evolutionary doctrine could thus again secure man's supremacy.

Werewolves, werebears and outlawry

In her book on werewolf belief in Sweden, ethnologist Ella Odsted has pointed out that there are strong beliefs about transformation to both wolf and bear in Swedish and Nordic folklore. In the

north, shapeshifting occurs with bears rather than wolves. It is reflected in expressions like "run bear", "go bear", "go into bear shape", "turn to bear" (Odstedt 2012, 95; cf. Sundqvist, this volume). In northern Sweden, the werewolf is thus what we could call a werebear. The bear one meets in the forest could be a human turned into a bear, or a bear that has been enchanted in some other way.

There is also a link in Scandinavian history between werewolves and outlawry (*Friedlosigkeit*[2]), which is attested in the old Icelandic expression *vargr i véum*.[3] As Olof Sundqvist has pointed out, a person who killed someone on sanctified ground was sometimes metaphorically described as a "wolf" in ancient Scandinavia: "In *Egils saga* 49, Queen Gunnhildr's brother, Eyvindr, was considered a 'wolf' after killing at a *vé* sanctuary: Because Eyvindr had committed murder at a sacred place he was declared a defiler [actually a wolf (*vargr*)] and had to go into outlawry at once" (Sundqvist 2016, 294). *Vargr i véum,* the human who becomes *friedlos,* an outlaw, is a hybrid of human and animal, a kind of shapeshifter, a werewolf – or a werebear. This transgression of the human-animal divide opens up the possibility of regarding the hunted animal as someone who has been made *friedlos*, an outlaw.

The philosopher Giorgio Agamben connects his concept of "homo sacer" with this Scandinavian notion of *Friedlosigkeit*, and the old Icelandic expression *vargr i veum*: "In the bandit and the outlaw (wargus, vargr, the wolf and, in the religious sense, the sacred wolf, vargr y veum[4]), Germanic and Scandinavian antiquity give us a brother of homo sacer beyond the shadow of any doubt" (Agamben 1998, 63). This "monstrous hybrid of human and animal" is a man divided between the forest and the city, "the werewolf – is, therefore, in its origin the figure of the man who has been banned from the city" (ibid.). In this connection between homo sacer, outlawry, and werewolves, as pointed out by Agamben, the bear, with its complex tradition of werebears, holy bears, and bears as *friedlos* with a bounty on their heads can be understood as *ursus sacer* – and thereby also as a political category.

The werebear in *The Story of Gösta Berling*

The Story of Gösta Berling, Lagerlöf's debut novel, published in Sweden in 1891, is filled with adventures and romance and set in the Swedish province of Värmland in the 1820s, with the young and deposed priest Gösta Berling as its hero. On the surface, the chapter "The great bear in Gurlita cliff" is a story of a bear hunt, but, in the background, there is a love story. An old man kills a bear and pretends the deed was carried out by a young, poor man – in order to make the young man eligible as a husband so he can marry the woman he loves. In this story, the bear is at first depicted as an almost supernatural monster. It starts out with a description of the dark, dangerous forest where unholy creatures dwell "which long to sink themselves in a blood-filled throat, and whose eyes shine with murderous desires" (Lagerlöf 1898, 122):

> And there lives the most terrible of them all, the bear, who has the strength of twelve men, and who, when he becomes a devil, can be killed only with a silver bullet. […] Terrible to say, dreadful to believe, this is no ordinary bear. No one can hope to kill him if he does not have a silver bullet in his gun. A bullet of silver and bell-metal cast on a Thursday evening at new moon in the church-tower […] (Lagerlöf 1898, 123, 128).

2 In Swedish there are the same words: *fredlös* and *fredlöshet*, as in German *friedlos* and *Friedlosigkeit*. Since Agamben 1998 refers to the German words, I will do the same here in this text.

3 I am grateful to Olof Sundqvist for pointing out that this expression is attested in *Óláfs saga Tryggvasonar* (Oddr): *gerir Hakon j. utlagþan oc scylldi hann heita vargr i veum. er hann hafði brotit hit ǫzta hof i Gautlandi*.

4 Agamben (1998) uses "y" instead of "i"; the Old Icelandic spelling is *vargr i veum*.

The need for a bullet made out of silver and metal from the church bell suggests that this is some kind of werebear, a devilish bear. But, after the reader has been drawn into this gothic, scary mood, the story shifts the focus on to the bear himself. He is now called "the forest king" instead, and the reader gets to partake in his previous encounters with the hunters:

> He remembered how they had come on him another time, when he and his queen consort had just laid themselves down for their winter sleep in the old lair here on Gurlitta Cliff and had young ones in the hole. He remembered well how they came upon them unawares. He got away all right, throwing to either side everything that stood in his path; but he must limp for life from a bullet in his thigh, and when he came back at night to the royal lair, the snow was red with his queen consort's blood, and the royal children had been carried away to the plain, to grow up there and be man's servants and friends (Lagerlöf 1898, 126).

When the bear becomes the narrator, he is shown as a *vargr i veum*, a werebear who is also an outlaw. When Gösta comes upon the bear, he cannot shoot him because he "sees him as he is – a poor, persecuted beast, whom he will not deprive of life, which is all he has left, since people have taken everything else from him" (Lagerlöf 1898, 127). Within the same story, Lagerlöf goes from depicting the bear as devilish and murderous, to the opposite, a hunted and persecuted creature. Maria Karlsson has, in her assessment of the function of melodrama in *The Story of Gösta Berling,* pointed out that the man's change takes place in a meeting with a woman, where he takes her seriously and helps increase her influence upon him (Karlsson 2002, 200). The melodrama functions in the same way with hunted animals in the story. It is in the existential meeting with the other in the form of the bear that both Gösta, and the reader, can see that the mythical werebear is only a "poor, persecuted beast".

The short story "The Truce of God"

In Selma Lagerlöf's short story "The Truce of God" ("Gudsfreden", 1899) not only the ethical relationship towards the bear, but the bear's moral agency is accentuated through the biblical parable of the good Samaritan (Luke 10:25–37). Lagerlöf explicitly refers to *Pax et treuga Dei* and the commandment that "You shall love thy neighbour as yourself", as it was used in the Gospels of Luke (10:27) and Mark (12:31).[5]

When Lagerlöf draws attention to the religious domain of the bear, a connection is also made to the ancient belief in the bear's holiness. As Pastoreau (2011) has shown, the bear played a role in various cults throughout the whole of Europe, up until the Middle Ages. In the Nordic region, the belief in the importance of showing the bear respect carried on for much longer, and it seems to have co-existed with the Christian faith. There is an eyewitness account from such a ceremony as late

5 Lagerlöf is here using the Swedish word *Gudsfreden*, for the Latin *Pax et treuga Dei*, which translates as "The Peace and Truce of God". This tradition from the Middle Ages was created in reaction to the constant fighting, not only among noblemen, but between noblemen and everyone else. Peace was permanently proclaimed in certain buildings like churches, and certain persons, such as monks, clerics, and women, as well as cattle and horses should always be protected by this peace. The Truce of God or *Treuga Dei* concerned only special periods and had its origin in Normandy in the city of Caen in the 11th century. The Peace and Truce of God was required throughout Advent, the season of Lent, and from the beginning of the Rogation days until eight days after Pentecost, and during certain days of the week (cf. https://www.britannica.com/event/Truce-of-God; "Gudsfrid" in Nordisk familjebok 1909: http://runeberg.org/nfbj/0298.html). The Truce of God included domestic animals, but Lagerlöf chooses to also include the wild animals in the category protected by The Truce of God, which was probably an accepted interpretation of the wider concept to abstain from all kinds of violence during these days.

as 1890 in Sweden (Björklöf 2010, 260). A common denominator to these bear ceremonies is the respect and reverence for the powerful animal that determines how one approaches the bear, and how one behaves after the bear has been killed. The bear must never be killed in its sleep during hibernation.

Lagerlöf's story takes place on Christmas Eve at Ingmarsgården, the homestead of the rich Ingmarsson family. As everyone is busy sweeping and cleaning the house, old Ingmar Ingmarsson decides to go out and cut the sprigs for the sauna. The wind blows and it snows heavily. Ingmarsson becomes dizzy, and on his way home he walks in the wrong direction. He thus goes astray in the woods, while the darkness descends upon him. Ingmarsson understands that if he falls asleep he will freeze to death. In the end, he gives up and crawls in under a heap of twigs. However, it turns out to be a bear den:

> But when he pushed his body under the twigs, he felt that inside the pile was something warm and soft. Here lies a bear and sleeps, he thought. […] But the bear did not seem to want to harm the one who sought protection under his roof during such a stormy night. He moved slightly further down into his hole as if to give space to the guest, and shortly afterwards he slept with regular, whistling breaths" (Lagerlöf 1899, 256).[6]

Old Ingmar Ingmarsson is thus saved from freezing to death by the bear who, without damaging him, lets him share his den during the night. This is thus a true compassionate act by the bear.

While old Ingmarsson was getting lost in the woods, everyone in the homestead was confined at home because of the storm. To calm everyone, Mrs Ingmarsson read from the Bible, and what she with "meager intellectual skills" chose to read was "the story of the man who travelled from Jerusalem to Jericho and fell into the hands of robbers" (Lagerlöf 1899, 257):

> The old woman read and read and came to the question: "Who was his neighbour, who came before the robbers?" But before she had time to read the answer, the door was opened, and old Ingmar entered the room. "Mother, father is here", said one of the daughters, and it was never read out loud that the man's neighbour was the one who had shown him mercy (Lagerlöf 1899, 258).

So, the question of man's neighbour never receives an answer. Instead of celebrating Christmas with joy, now when the father is returned to them, everyone agrees that they must dash out and shoot the bear. "Because it is so", it is said in Lagerlöf's text, "that it is a man's duty to slay the bear, where and when he comes upon him. It is not possible to spare a bear, because sooner or later he gets a taste for meat, and then he spares neither animal nor man" (Lagerlöf 1899, 258). But even though she knows this injunction well, Mrs Ingmarsson is distressed, and she continues to search the Bible for "that which was preached in the church this day, but she got no further than 'Peace on earth, and goodwill to all men!' She remained sitting and stared at these words with her fading eyes, and from time to time she drew a heavy sigh" (ibid.).

Vivi Edström, who is one of the few Lagerlöf researchers who mentions "Gudsfreden", points out that "around the bear, there is a whole mythology". This is based both on fear and on the bear's resemblance to humans and Lagerlöf suggests these analogies when she makes the bear the farmer's saviour. In bear hunts, "the woman seldom matters", but here, Edström writes, "the story shifts its centre from the hunt and the power to the woman, the old housewife waiting at home on the farm" (Edström 2020, 240).

6 All translations from "Gudsfreden" in this paper were made by the author.

Before Mrs Ingmarsson has time to formulate for herself what is amiss, the youngest son rushes in. He is very upset and can barely talk. She pats him on the cheek and holds him "as she has not done since he was a little boy". He breaks down and starts crying:

> "I understand that there is something about father."
> "Yes, but it is worse than that", sobbed the son.
> "Is it worse than that?" The man cried increasingly fiercely; he did not know how to get power over his voice. Finally, he raised his coarse hand with his wide fingers and pointed to that which she just had read.
> "Peace on earth, and Goodwill to all Men! – Is there anything about this?", she asked.
> "Yes", he answered.
> "Is there something about Christmas peace?"
> "Yes."
> "You wanted to do an evil act this morning."
> "Yes."
> "And God has punished us?"
> "God has punished us." (Lagerlöf 1899, 260).

Finally, he tells her what has happened. Old Ingmarsson and his sons had found the den and loaded the guns. As mentioned earlier, according to the old bear ceremonies it was forbidden to kill a bear while it was asleep because that was disrespectful. Old Ingmar Ingmarsson and his sons intended to kill the creature who saved him *and* break the ancient taboo about killing a sleeping bear, an endangered animal, and this on Christmas Eve itself when peace is supposed to rule on earth. It was a violation on many levels. And the bear literally struck back: "He came straight at old Ingmar Ingmarsson and gave him a blow to his head, which brought him down as if he had been hit by lightning" (Lagerlöf 1899, 260). The bear did not care about the other hunters and ran off into the forest.

The province of Värmland, where Lagerlöf lived, had a large area of so-called "Finn-forests". These were deep forests that the government wanted to populate from the 17th century and onwards and therefore gave tax liberties to people who established themselves there. This was particularly attractive to Finnish people who lacked land at that time, and there are several such areas in Sweden where so-called Forest Finns (*skogsfinnar*) lived (see Keinänen, this volume). Since bear cults were known both among the southern Sami and the Finns, and there was such a large Finnish-speaking population in her neighbourhood, Lagerlöf was likely familiar with some notions connected to the bear cults. That the bear is awake and hears how the hunters gather outside, understands what they are planning, and knows who the culprit is – it is only old Ingmarsson whom the bear attacks – seems to testify to the ancient notion that the bear is omniscient and understands human speech (Björklöf 2010, 270). Old Ingmarsson has in every way disrespected the bear, whether the bear is regarded as a sacred animal or as a neighbour of humans in a Christian sense.

Within the context of the story, God has punished Ingmar and his sons for not showing mercy to their neighbour. Mrs Ingmarsson says that "at Christmas, God set peace between animals and humans, and the poor animal kept God's commandments, but we broke it, and therefore we are under God's punishment" (Lagerlöf 1899, 262). In contrast to the humans, the bear has kept God's commandments. The bear is the one whom chooses to be a merciful Samaritan, and who also could see that "thy neighbour" can be someone different from oneself, even someone who is usually one's enemy. Realising that they are under God's punishment, Mrs Ingmarsson insists that her husband's funeral should be as insignificant as possible. If old Ingmarsson had violated the king or the bailiff, the Ingmars would not have humbled themselves, but "they have sinned against a norm that is more fundamental than the rules of society" as Edström (2020, 241) writes.

As often with Lagerlöf, it is possible to read her stories both religiously and secularly at the same time. By making bear and human equal moral beings before God, Lagerlöf rejects anthropocentrism, which places man, as an image of God, at the centre of the universe. Read from a cultural-historical perspective in a post-Darwinian era, Lagerlöf undermines the evolutionary logic that says that man is the crown of evolution and thus can do what he wants with more primitive beings. Also, from an animal rights perspective, it is possible to read the story as an argument in the contemporary debate, in which the Swedish newspapers of the 1890s made the appeal of "Do not let the bear be exterminated" (Lönnberg 1929, 11).

When Ingmarsson and his sons tried to kill the bear, they treated the bear as *friedlos*, as someone excluded from both profane and divine law. But old Ingmarsson was also made *friedlos* and expelled from both the divine and profane order, since he, according to Mrs Ingmarsson, was punished by God when the bear killed him, and he was deprived of a high-status funeral. In the end, the bear and old Ingmarsson share the same place in the universe, and the same condition of having become *friedlos,* that is "sacer" in Agamben's sense of being a hybrid between man and animal: "a realm of indistinction and of passage between animal and man, physis and nomos, exclusion and inclusion: the life of the bandit is the life of the *loup garou*, the werewolf, who is precisely neither man nor beast, and who dwells paradoxically within both while belonging to neither" (Agamben 1998, 63).

Father Bear and Nils Holgersson

In *The Wonderful Adventures of Nils* (1913), the bear is also *friedlos*, because he is chased, and, because he is given a voice of his own, he transcends the border between man and beast. Written as a geography book for schoolchildren and published 1906–1907, it shows Nils travelling all over Sweden in its course. The story opens with the protagonist, Nils, being turned into a small elf as a punishment for disrespecting the house elf. He becomes a lilliput, but along with the transformation comes the ability to talk with animals and to have night vision. Anna-Karin Palm writes: "Exposed and vulnerable, he must now seek protection from the animals he previously despised" (Palm 2019, 374). Nils's penance is carried out through good deeds to different animals and, in the end, it is the cow Majros who gives him approval (Edström 2020, 335). The animals become anthropomorphised and assume more or less human traits.

In the chapter called "Thumbietot and the Bears. The Ironworks" Nils is travelling across the mining district in Dalarna, when a gust of wind blows him off the back of the goose he is riding, and he falls to the ground. It turns out he has fallen into a shaft where a bear family lives. Mother Bear does not understand that Nils is human, and she gives him to her cubs to play with and eat. They have a lot of fun chasing poor Nils, so they do not eat him. They fall asleep with Nils between them in order to continue the fun in the morning.

When Father Bear, "this old monarch of the forest", comes home he detects the smell of a human. Mother Bear thinks this absurd and refers to the old regulations between men and bears:

> "It has been settled for good and all that we are not to harm mankind anymore; but if one of them were to put in an appearance here, where the cubs and I have our quarters, there wouldn't be enough left of him for you to catch even a scent of him!" (Lagerlöf 1913, ch. "Thumbietot …").[7]

7 I'm referring here to the edition at www.gutenberg.org, which is not paginated. I will therefore in the following just refer to this chapter (Lagerlöf 1913, ch. "Thumbietot …").

It turns out that Father Bear has been away looking for a new residence for his family, because he is alarmed by the new ironworks: "I can't be content here now since the big noise-shop has been built right in our neighbourhood." He has been searching for other bears to see how they fared further away, "but I had my trouble for nothing. There wasn't a bear's den left in the whole forest." And Mother Bear answers resignedly: "I believe the humans want the whole earth to themselves. Even if we leave people and cattle in peace and live solely upon lingon and insects and green things, we cannot remain unmolested in the forest! I wonder where we could move to in order to live in peace?" (Lagerlöf 1913, ch. "Thumbietot …"). Father and Mother Bear both bear witness to how the bears are chased by humans to the extent that there are no bears left in the forest.

With its appeal of peace, Mother Bear's reflection both echoes Mrs Ingmarsson's understanding of peace between humans and animals during Christmas and shows her to be an animal with a moral agency in the same way as the bear in "The Truce of God". But Mother Bear's comment also links her to Lagerlöf's view of women's responsibility in the national project. Lagerlöf was very engaged in both women's suffrage and later, during World War I, the peace movement. In her famous speech "*Hem och stat*" ("Home and State") at the 6th international suffrage congress in Stockholm in 1911, she situated women in history as the makers of the "good home", but then went on to show how central the home has been for society as a whole, and she ended with the closing remark: "The little masterpiece, the home, was our creation with the help of man. The great masterpiece, the state, will be made by man when he seriously takes on woman as his helper."[8] Anna-Karin Palm points out that "Selma Lagerlöf's nationalism differs from the dominant male voices in that she sees so clearly that women must also be given a place in the national project if any real elevation is to take place, and women's hard work is given a large space in the school text book" (Palm 2019, 371). Mother Bear's comment that the bears keep their side of the bargain and maintain the peace with humans shows her to be a responsible and hard-working person, just as Lagerlöf envisions women in the national project.

When Father Bear discovers Nils he intends to kill him, but he is stopped when Nils lights some matches that he throws at the bear. When Father Bear understands that Nils can handle fire, he exclaims: "You shall render me a service. Now I'm very glad that I did not eat you!" He wants Nils to burn down the ironworks. Father Bear tells Nils that "my forefathers lived in this region from the time that the forests first sprang up", and that he has lived here in peace all his life:

> "In the beginning I wasn't troubled much by the human kind. They dug in the mountains and picked up a little ore down here, by the rapids; they had a forge and a furnace, but the hammers sounded only a few hours during the day, and the furnace was not fired more than two moons at a stretch. It wasn't so bad that I was unable to stand it; but these last years, since they have built this noise-shop, which keeps up the same racket both day and night, life here has become intolerable. Formerly only a manager and a couple of blacksmiths lived here, but now there are so many people that I can never feel safe from them" (Lagerlöf 1913, ch. "Thumbietot …").

Father Bear describes how technology and the process of modernity have invaded nature and disturbed the wildlife to the extent that the bears feel that they cannot live there anymore. They go to the ironworks, and when Father Bear asks Nils to look into these, he is not appalled, as the bear is, but enchanted: "The boy was completely charmed by the marvellous display and almost forgot that he was imprisoned between a bear's two paws" (Lagerlöf 1913, ch. "Thumbietot …").

8 Quoted from Alice Burman's English translation of Louise Vinge's introduction to Selma Lagerlöf and her work at https://litteraturbanken.se/författare/LagerlöfS/omtexterna/SelmaLagerlofEnglish.html.

Father Bear gives Nils an ultimatum: "If you will set fire to the noise-works, I'll promise to spare your life" – if not, he will be killed (Lagerlöf 1913 ch. "Thumbietot …"). Despite this ultimatum, and that Father Bear has said that "iron is the thing that has given men the advantage over us bears", Nils hesitates. Finally, he says: "You'll not get me to destroy the ironworks! Iron is so great a blessing that it will never do to harm it" (Lagerlöf 1913 ch. "Thumbietot …"). Just when the bear is about to eat him, Nils hears the clicking of a rifle from approaching hunters. He warns Father Bear, who lets go of Nils and runs off to safety. It is a very ambivalent ending. Even though Nils saves Father Bear from the hunters, he lets the industrial modernity that has destroyed the bears' habitat triumph.

When Father Bear is portrayed as a father trying to protect his family, he is anthropomorphised, and the reader is encouraged to think of him in the same way as a human father. The bears are portrayed as a family threatened by external forces they cannot control. They do not attack people and expect to be treated the same way, according to what they perceive as a mutual and equal agreement. On the other hand, if the humans violate this agreement, they will show no mercy, something which both Mother and Father Bear testify to. The potential moral conflict between saving the ironworks and saving the bears is solved partly because Father Bear is such an ambiguous figure himself. After all, he was just about to eat Nils when the hunters showed up.

Lagerlöf is ambivalent about the bears' situation. She sees and understands their needs and desires, but her strong belief in the processes of modernity makes her choose modern technology over the bears' habitat. Nils's desire to let the ironworks remain prevails, while Father Bear's desire to let nature return to a space uninhabited by humans does not. Lagerlöf's optimism for all kinds of development made her affirm the emerging industrialism to a higher extent than her contemporaries, according to Edström: "Industrialization is depicted without reservation. Although it is clear that the large ironworks in Bergslagen threatens the bear's wild natural habitat, Nils affirms an activity 'that gave bread to so many people'" (Edström 2020, 339).

Conclusion

Even though Father Bear, thanks to Nils's warning, escapes the hunters, the bear again becomes *friedlos*, an outlaw. Thus, the bear at Gurlitta, the bear in "The Truce of God", and Father Bear each end up as an *ursus sacer*, an animal that may be killed but not sacrificed: someone outside both human and divine law. In this sense, all three bears in Lagerlöf's bear stories continue to be, to quote Agamben again, a "monstrous hybrid of human and animal", i. e. a creature divided between the forest and the city (Agamben 1998, 63).

Lagerlöf's three bear stories show that she was familiar with the old folklore about the bear and at the same time was aware of how the bear was, in her own time, an endangered animal. Nevertheless, her view of the bear displays an inherent tension between the ethics of the individual and the ethics of culture as a whole. It is a tension that we also recognise in our own contemporary discussion on climate change and ecopolitics. At the individual level, when man and bear meet, they stand in a mutual, moral relationship. Therefore, it is immoral for humans to hunt the bear. At a societal level, on the other hand, Lagerlöf seems to say that human technological development must take precedence over the bears' interests, no matter how reprehensible they may be. In this sense, the bear becomes a political category, when the bear is the one who must adapt to the processes of modernity. Still, her stories show how devastating the state's bounty for bears was, and she opens up the Christian-ethical dimension of the bear and, in this, she problematises the anthropocentric paradigm.

Michel Pastoureau wrote that: "In killing the bear, his kinsman, his fellow creature, his first God, man long ago killed his own memory" (Pastoureau 2011, 239). In her bear stories, Lagerlöf reminds

us that the bear is a fellow creature, and she restores some of this lost memory. Through literature, the bear's significance can thus continue to resonate into our own time.

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Bears as *pares*: Some notes on bear stories in Zapinejie (Arkhangelskaya oblast, northern part of the Russian Federation) and the tendency to equality in human-bear relations

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Keywords: Bear, human, equality, intensity, narratives, Russian North

Abstract: The article assembles the narratives of Russian villagers in Zapinejie (Arkhangelskaya oblast, northern part of the Russian Federation) who encounter bears during their forest trips. The stories showcase that the bear, as opposed to other animals, is perceived not just as a beast but as a kind of forest owner who acts as humans do. In gatherers' stories, bears act as animals who are unwilling to harm people. In hunters' stories, bears are presented almost as human beings living in the woods, doing very similar things. Using the idea of "equality without equivalence", I will broaden the notion of "tendency to equality" proposed by H. Walker for interhuman relations and expand it to include human-animal relations. Such aspects as "singularity", "concreteness" or "love-pity-compassion" can be found in narratives about bears and in human-bear relations.

Introduction

The bear is a very important character in Russian literature and folklore, and it is also a widespread and well recognisable symbol of Russia. In this paper, I will demonstrate how the image is represented in the usual talk of people in a remote village in the northern part of European Russia. This region, which I call "Zapinejie", encompasses the three most vast and sparsely populated districts of Arkhangelskaya oblast, one of the most northern parts of the Russian Federation. Although they are part of Russian peasant agricultural civilisation, the people living there spend a long time in the woods, e.g. gathering berries, hunting, and fishing. Their knowledge of bears comes not only from tales and legends but primarily from their everyday experience. In talks, stories, and jokes, the bear is often depicted as a creature that has human traits rather than just as an animal.

I will use the concept of "equality without equivalence" to speak about humans and bears as opposed to other animals. This concept helps the further elaboration of the approach to bears as "other than human persons" (McClellan 1970; Brightman 1993; Smith 1998; Clark/Slocombe 2009; Dudeck 2018). This framework is chosen because this paper forms part of broader research on the definition of equality in the Russian North and how equality is produced and spoken about by the local people of that region. I realise quite clearly that the very notion of equality is a "western" concept. However, the inhabitants of Zapinejie (the region I study and which will be described in detail

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 887–899 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134369

in the following pages) have had connections to the Russian State and its policy since at least the 16th century, and since the 18th century they have lived within the framework of the Imperial state policy of "imposing equality" (equal land sharing in *obshchina* [Russian for village community; author's note], and equal responsibility before the law [Russ.: *krugovaya poruka*]; Kolesnikov 1976; Kamkin 1995). A lot of observers (travellers, state revisors, and the like) have written that the Russian North is the place where equality can be seen in its pure form (Kachalov 2012, 434–435). My aim here is to showcase how equality works in relations between humans and bears as part of a larger study on how equality works in Zapinejie.

My theoretical framework will be the discussion about equality in contemporary anthropological literature (Beteille 1994; Artemova 2020). Before the 1980s, the term "equality" was widely used to designate several societies (especially those of the Melanesians and Bushmen), but, at the end of the decade, articles appeared that criticised the use of this kind of designation when the meaning of equality has not been especially addressed (Jolly 1987). In 1994, the American anthropologist Joel Robbins proposed the Dumontian approach to the notion of equality. He argued that equality was a value and could not be fully realised in everyday life (Robbins 1994). Unfortunately, this approach was not elaborated on by other anthropologists. On the threshold from the 20th to the 21st century, anthropological articles about equality mostly dealt with gender. In this case, equality is regarded more as a governmental project or more of a goal than as a status quo (Squires 2007; Rivkin-Fish 2010).

In my text, I will follow the main idea of Joel Robbins "to take equality seriously" and use the approach proposed by the British anthropologist Harry Walker. He writes that the very term "equality" is Eurocentric, and that it is almost impossible to find "true" equality anywhere else. However, he outlines ten specific types of interhuman relations that create "equality without equivalence" (Walker 2020), and he traces ten particular ways of dealing with interhuman relations among the Amazonian Urarina group. In this paper, I will demonstrate that at least some of the ways we deal with relationships can be applied to human-bear relations in the northern part of European Russia. Though these human-bear relations cannot be treated as "equal", they demonstrate a clear tendency to "equality without equivalence". And, although bears and humans cannot be treated as the same beings in respect of their relations, the tendency to see bears as *pares* is also evident (Clark/Slocombe 2009, 4).

What is Zapinejie?

As I said before, my field research took place in a village situated in the eastern part of Arkhangelskaya oblast, which I call Zapinejie (Fig. 1).[1] The settlement of Vozchiki that I studied is rather large in comparison to the average settlement in this area; it has more than 500 inhabitants, whereas an average settlement has about 50. Arkhangelskaya oblast is situated north of the 60th degree northern latitude, the same as Greenland or the northern territories of Norway. The lowest temperature in January is -53 °C. According to local tradition, the name *Vozchiki* is used both as a name of the settlement and, at the same time, as the name of its inhabitants. I will use this name in both senses, writing the former with the first letter capitalised, and the latter with it in lower-case.

Before proceeding directly to the subject, I would like to stress two features of vozchiki society that are important for this discussion – the multi-vector character of its household activities with a special focus on the forest, and the fractal character of the remoteness of the village in relation to Arkhangelskaya oblast and Russia in general.

1 All the geographic and personal names in this texts are pseudonyms.

As with the majority of the Russian village inhabitants, the vozchiki think of themselves as peasants and farmers. This point of view is ubiquitous throughout the country. However, Vozchiki is not an "average Russian village", which is usually imagined as a dozen small houses surrounded by steppe. While northern villages usually consist of the same dozen big timber buildings, each of which houses a large, extended family of six or more people, Vozchiki has more than 50 houses and a population of 500 people. The village is surrounded by endless taiga, and the distance between two inhabited places is usually about 40–50 kilometres. The villagers are Russians, but in lots of senses they are very close to indigenous peoples, as they themselves say "We – Mezenets – are like Nenets" (Russ.: "мы – мезенцы – те же ненцы" [the Mezenets: the inhabitants of Mezen town; the Nenets people are reindeer herders from northern parts of Russia; author's note]). This marginal or liminal position between agriculturalists and reindeer herders, and between Russians and indigenous peoples, can be seen in the following example, which illustrates the importance of fishing and hunting in vozchiki economics and concerns the place of agriculture among different types of household activities in the present-day village.

The most important crop for the vozchiki is the potato. This was typical for many Russian villages and *dacha* settlements all over the country in the 20th century (Ries 2009). Despite this, the potato is not treated very carefully. Many people plant it as soon as it is possible to dig the earth with a shovel. Usually, after that time the cold weather comes back for a week or two, so the potato, although it does not rot, stays dormant for a month or more. Those people who plant potatoes one or two weeks later see them sprout a week earlier than the impatient ones. The more patient and slower gardeners ultimately receive a better harvest.

So why do people hurry? What benefits do they receive? A friend of mine, named Andrey, told me that "the early potato planting frees people to go fishing". With the arrival of the first warm days, the middle part of the river usually melts, while the upper parts of the river (flowing from the south to the north; author's note) stay frozen. When the cold returns in the next one or two weeks, the temperature is still not low enough to stop ice floating, and the upper parts of the river also become free of ice. The next two or three weeks are the most convenient time for fishing: The water level is high enough to flood the rapids, and the fish come there for spawning. So, everyone has the choice – to get more potatoes or more fish – and many of the men choose to fish.

The second peculiarity of Vozchiki is its position in the area of the Russian North. The remoteness of this area plays a great role in the social life of the local inhabitants. In the middle of the 20th century, it took about two or three days to reach the *centr rayona* (district centre), about 70 km from the village. And from the centre of the district, it took another two or three days to reach the *oblastnoy centr* (land centre or county centre) – the city of Arkhangelsk. What is characteristic of Vozchiki is its remoteness from the centre. And this feature makes this particular village and the particular region of Zapinejie a fractal mirror of Russia. The Russian Federation is often seen as a very remote part of Europe, though within Russia there is Siberia, which is remote from the European part of the state. Within the European part of Russia, Siberia is situated in its north, which in Russian is simply called the "Russian North" (although in English these words denote all of the circumpolar part of the Russian Federation; author's note). Within the northern part of European Russia, Arkhangelskaya oblast is perceived as one of the most vast and remote regions. And finally, the most remote part of the Arkhangelsk region is Zapinejie.

This idea of remoteness is important for the following discussion because the inhabitants of Vozchiki are quite aware of who the bear is, what it means to be in the woods, and what it means to encounter this animal. Their knowledge comes from their real and personal experience rather than from tales, belief narratives, or other types of folklore texts. I will use the terms "talks", following Nancy Ries (Ries 1997) and "stories" to define different texts that are narrated from everyday life and only partly stem from folklore representations.

Coexistence

Gatherers' stories

The most common story about bears is "how one met a bear" while picking berries or mushrooms. Almost every person in Vozchiki can tell a story of this kind. The most simple one is: "We went to the forest to collect raspberries, and we made our way deep into the wood. I settled down on one side of a raspberry bush while my friend went to the other side. We were gathering berries silently for a while but then I could hear my friend moving and grousing on the other side. I started slowly moving towards her and suddenly saw that it was not her but a bear. I screamed loudly and ran away and my friend pretended to be a dog barking. The bear went away."

Typical parts of this particular story are the following: A person goes deep into the wood, s/he stays silent for quite a long time, and then s/he suddenly meets a bear. The person makes loud sounds and the bear goes away. Loud sounds can scare the bear, but they also let it know where the human is. Once, in 2010, I had to make a 40-km trip through taiga, and an old man who hosted our group told us: "If you don't want to meet a bear, take an empty tin and some other metal thing and knock them together. The bear will hear you from even more than a kilometre away." It is important to stress here that the bear is not perceived as a dangerous, aggressive animal who wants to attack every human, but rather as a creature that would not attack and even would keep at a distance if it knows that a human is nearby. Speaking about meeting with bears, a vozchiki woman said once: "We were so involved in picking berries that we stopped talking (singing/shouting/whistling). That's why a bear approached us." It is possible to recognise the same point here: The bear never attacks intentionally but only when the encounter is sudden.

There is a difference between bears and wolves in this regard. Bears most often attack in summer (because in winter they hibernate) and wolves almost always attack in winter. But the crucial difference is in the way these animals attack. If one wants to escape a bear, as local people convey, s/he should shout and run away or still shout and move away slowly. But, to escape a pack of wolves, it is only possible to climb a tree and wait for someone with a rifle. As one man put it: "The bear can turn away and *he* would leave a person; the wolf would never do so."

It is also important to stress two aspects: First, the bear is always mentioned as "he", not "she" in talks by women and men who are not hunters. I have never heard stories about a bear encounter in which a narrator noticed that an animal was female (though usually the use of the masculine form in Russian indicates in fact that the sex of the animal is indefinite). Second, a bear in the stories does the same things as a human; for example, he picks raspberries or just walks through the forest. This element is important because it shows the similarity between bears and humans.

Hunters' stories

In hunters' stories and talks, the bear appears in many and various situations. First of all, hunters, as opposed to mushroom and berry pickers, usually stay silent while walking through the wood. It is impossible for them to make a noise because this will scare the game. That is why, although hunters encounter bears more often, they are still not afraid of their aggressiveness. One of my best vozchiki friends, Dmitriy, told me a story of what he does if a bear is nearby. "Once I was walking along my *putik* (a local word denoting a path in the woods along which a hunter sets traps; author's note) and saw a piece of bear shit that was still steaming. I said silently to myself: 'Go your own way. I do my job; you do your job. I don't touch you; you don't touch me.' And that autumn I saw his footprints several times but never met him."

It is interesting to stress that the last phrase literally repeats the concept of indigenous peoples in Canada, who say to the bear: "I don't bother you; you don't bother me" (Clark/Slocombe 2009, 6). This hunter's story involves several ideas that are important for this text. First, the bear and the hu-

man each have their own, different, business [Russ.: свои дела] in the wood. Both of them live side by side and should not disturb and obstruct each other. In the gatherers' stories, a bear carries out the same activities as people; in the hunters' stories, one can find the same idea but the range of activities is broader: A bear can walk through the wood, collect berries, hunt, sleep and perform a lot of other activities in the same way as a hunter.

Second, it is important that a bear and a hunter are also similar in that they are able to hurt each other. On the one hand, a bear can kill a hunter, and local people use the Russian word *zadrat*, literally "tear to pieces". On the other hand, a hunter has a rifle and he (or rarely "she") can shoot a bear. However, an encounter between a hunter and a bear is not inevitable: They do not have to share anything except a territory. So, in many cases, they can coexist peacefully. I will turn to such stories in the next section of this paper.

Third, and maybe the most interesting aspect, is the possibility of speaking to a bear and, what is even more surprising, the ability of bear to understand people. In the story quoted above, the hunter speaks to the bear, but does it very silently. So, it is presumed that the recipient (the bear) does not hear the voice itself but rather captures the message of the hunter's inner voice. Once, I went with my friend to his hunting hut. It was locked by a padlock. Dmitriy knocked at the door and said so softly that I could hardly hear the words: "Hello my friend hut, we haven't seen each other for a long time". After that, he unlocked the door and entered. What he said was more important than whether he was heard by someone. In this case, it was not a bear but a hut that was greeted. I think that the most important thing about these two situations is that it is the very act of communication that acknowledges a relationship.

Intrusion

Villager's story

A lesser element in the killing stories concerns the bear who starts to disturb human possessions. I heard two types of this kind of account. The first, told by Tatiana, was the following: "In 2012, in March, a bear started to enter the village and regularly tried to find something to eat at the scrapyard. Our men were forced to shoot him. He was white from grey hair; he was very old. I suppose he hadn't got enough food in autumn, so he woke up very early (in Vozchiki region, the month of March is still the end of winter, though the meteorological spring starts, including the end of bear hibernation period, in mid-April; author's note). But if a bear comes to the village it is dangerous, it is necessary to kill him." This story, told by a woman, also depicts a bear as a being that can be understood, that can have its problems, very much like local people depict poor villagers who become drunkards or cannot find a job. The very act of killing is also depicted as unwilling (unintentional), and the narrator even shows compassion to the old animal. Another important thing is that the act of shooting is the consequence of breaking the rules: People had compassion for the bear, but were urged to shoot him because he had entered the village, i.e. had violated the border. A bear should not come to a human's place – to the village. If it does, then it should be punished.

Hunter's story

A hunter, Gennadiy, depicted the situation of returning to a hunting hut a bit differently. I would say that this situation was more folklorised (see below). His evidence was: "When one first enters a building one should greet its owner. If one comes to a village house when the owner is a *domovoy* (the Russian word for "brownie" or "boggart"; author's note), one should say: 'Hello, own[er]y-browny, let me in' (Russ.: привет, хозяюшко-домовеюшко, пусти пожить). But if one is coming to a hunting hut where the owner is a bear who lives nearby, one should also knock at the door and ask the bear for permission to dwell there. Near my hunting house lived a she-bear named Mashka. I asked her: 'Mashka, let me in' (*Mashka, pusti pozhit*)."

What we see here is "secondary folklorisation". This term was proposed by the Russian folklore researcher Kirill Chistov (Chistov 1986, 53–54) and means the returning of folklore texts, written down by professional ethnographers, to the village through the use of these texts in school education. I call Gennadiy's evidence more folklorised because he was not too shy to talk about boggarts, including a she-bear as an owner of his hunting place. Gennadiy explained in detail that a boggart in a village house was its last owner (in his case, Gennadiy's grandmother), who had died but still dwelt there as a spirit. He was not ashamed to tell me the name of the she-bear, the owner of his hunting place, and told me the name of his mother, who lived in his village house and was considered at that time to be a boggart in that house. It is important to stress that Gennadiy, born in Vozchiki, was taken at the age of seven to Arkhangelsk where he went to school, and he worked there for about ten years after he had finished school. He returned to the village at the age of 40, about five years ago, after he had lost his job in the city. Conversely, Dmitriy (see below, next story) has spent all his life in the village, going to the city only two or three times a year and spending just three or four days there. Dmitriy was always unwilling to talk about lower demonology characters. Also, he has never told me anything about hunting omens. He explained to me once: "If I tell you an omen, it won't work anymore". So, Dmitriy's attitude is more authentic and more vital from my point of view, whereas Gennadiy's attitude is more based on literature and folklore learnt at school. He is more alienated from vivid rural culture, that is why I label his stories as folklorised.

However, it is interesting to compare his account with that of Dmitriy and those of berry pickers (not hunters). First of all, his account is very clear and he gives comprehensible explanations about the details. For Dmitriy, all these details are taboo, especially if he has to discuss it with an outsider, like me. I can say that the same things that Dmitriy was doing silently, Gennadiy was explaining to outsiders. Second, a bear in hunters' stories becomes more individualistic. It is well known whether it is "he" or "she", it can have a special name, distinctive temper, and so on. Third, it is also possible to talk to the bear; hunters are not afraid of them as wild beasts (as simple villagers are) but they fear them as conscious actors who can remember bad things and seek revenge. Fourth, there is a special system of rules that a bear and a hunter know and obey. As Gennadiy put it, "if you greet the owner you will not have problems. If not, s/he will interfere with you".

To briefly sum up, the hunters' stories are much more detailed than those of the gatherers. Bears in hunters' stories may have names, temper, and a sex. The image (idea, picture, representation) of the bear as a being that dwells in the woods but is very similar to humans is also present. Moreover, in hunters' stories, it is possible to talk to a bear and it is assumed that there are several rules for interactions between humans and bears.

Sometimes, violation of human space and infrastructure was the reason for killing a bear. It is important to note that the bear was killed only when he had repeated his assault on the storehouse. So, as in the case with humans, the punishment was performed only when the offender did not stop. Thus the idea of the rules that were broken, and the shooting as a punishment is also obvious here.

Another typical case when a bear is killed at the end is the accounts of a bear who was used to destroying hunting huts and stealing food from them. Dmitriy once told me an interesting story of that kind. "It was about 20 years ago; I was working at the Arkhangelsk communications company. That winter, we were inspecting a telephone line from Leshukonskoye to Pinega (two big villages/small towns, centres of the neighbouring districts; author's note). When we were halfway to Pinega, we had to spend several nights at a small hunting hut in the taiga. Near the hut, there was a small storehouse in which tinned meat and condensed milk had been put just a week before our arrival. We found the storehouse destroyed (the door was knocked down; author's note) and all the tins were opened. We thought that people had done this, maybe escaped prisoners. But Makar, who was a good hunter, said: 'That is a bear'. The tins were not taken away, all of them were in the hut or right near it. They had been opened by being squeezed from two sides to push out the contents, especially those which

contained condensed milk with sugar. He also likes sweet stuff! So we had to drink tea without milk because the bear had already used it. Next year, the same storehouse was destroyed again and the head of the communications company asked hunters to hunt him down and shoot him."

In this story, the parity of bears and humans is very sharp. First, the act of knocking down the door and destroying the food-stuff can be performed either by humans or bears, no other animal can do it. The first thought of the signalmen inspecting the line was that it was a theft. It was only after detailed analyses that they concluded that it was a bear who had done it. Second, the expression "he also likes sweet stuff" points to a human peculiarity: People like sweeties. This parallel is especially stressed by the word "also", which means "like us, humans". So, in this account we can see not only similarities between bears and humans, as in previous stories, but it is obvious that humans and bears are alike and other animals are a bit different.

Rivalry

Nevertheless, not all the talks and stories about bears report a more or less peaceful coexistence (in the case of the berry pickers) or one-time encounters. There are a lot of accounts about long-term rivalries and several temptations for a bear to kill a hunter. First, I will turn to stories about how vozchiki people narrate cases of killing a bear, and after that I will proceed to the narratives about bears who tried to kill humans.

Before I turn to the real stories about how a bear killed or tried to kill a hunter, I would like to mention two sayings about the intentional hunting of a bear. The first is, "You can kill 39 bears, but the 40th bear will kill you". The number 40 is a mystic one in Russian (Orthodox) tradition: A person who has died spends 40 days as a soul on earth before they go to another world, it is only 40 days after its birth that it is possible to baptize a child, the length of pregnancy is considered to be 40 weeks, etc. (Zelenin 1992, 350–356). All these cases are linked with humans and human life and death. The linkage of the bear with the number 40 can be interpreted as the fact that the bear has a special place (that cannot be compared to the position of other animals but is more similar to a human position) in vernacular culture and that the bear is perceived as someone close to supernatural spiritual actors, such as "spirits", "souls" and "angels".

The other saying goes: "If you go hunting a bear you can prepare a place for its skin, if you go hunting an elk you should prepare yourself a coffin". The message here is that a bear is not as dangerous as an elk. It is important to have this in mind when we start with the accounts of bear-killers (people who were successful in killing bears).

The collection of stories about killing a bear can be divided into two parts. In the majority of cases, the bear is killed unintentionally. For example, one hunter said: "I went along my *putik* and suddenly saw a bear right in front of me. So, I couldn't stay apart and had to shoot him". It should be clarified that a bear is conceived to be very persistent: If a human goes straight up to him face-to-face it will never step aside and will fight. In this situation, the animal is understood not as cruel or bad but more as brave or tenacious. As one person said: "He is the same as us. If he meets you face-to-face he would never retreat". So, meeting a bear face-to-face means an inevitable fight and one of the participants will be killed. This idea urges hunters to kill a bear if they encounter him face-to-face. However, in the stories, hunters never boast of killing a bear. They usually say "I had to shoot him" or even "I was forced to do it". Or, if the story is told in the third person, the narrator says: "He couldn't do anything, he was compelled to shoot him". Dmitriy once told me: "The majority of bears are killed unintentionally, occasionally. If you meet him face-to-face you should shoot".

Another important idea here is "the sameness" of hunters and bears and their symmetric relations. These two ideas are crucially important for our discussion. The idea of sameness reflects the fact that the bear is intrinsically the same inside, though he is obviously not the same in appearance. It is not "animistic ontology" in Descola's sense (Descola 2013), because this similarity of internal sameness

and external differences binds only bears and humans and not all animals and natural objects. However, this very idea of sameness is very interesting and I will return to it at the end. The symmetric relation ("you have to shoot or s/he will kill you") is also implied in all bear-human relations.

The stories about bears who want to kill, try to kill, or have killed a person usually start with an unfinished fight, which is also a variant of symmetrical relations. Here are two very similar stories with different endings told by a hunter named Eugeniy. The first is: "Petr, one of my friends, encountered a bear and shot him down. He left the corpus (the body) in that place. But when he returned in the evening it wasn't there. He left that hunting place and didn't go hunting for two years. But the bears never forget and forgive. Two years later, at the time of haymaking, the man found that there was bear shit near his field. The next day, he found the shit right near the rick. He told his elder relative, and the latter said: 'He is chasing you, so we have to kill him'. They gathered five men from the village and shot him". The main idea of this account is that a bear always wants revenge on a hunter who has tried to kill him. There are some stories in which a bear found a hunter that missed him ten years later in another village. Here, the bear has its own temper and special traits. However, in different stories all the bears have almost the same temper: They are stubborn. And revenge becomes an idée-fixe for them. It is in this account, full of everyday life details, that it is possible to find the most typical description of a bear's temper.

The second story is an antipode to the first. Eugeniy related the following: "Another hunter, Mikhail, also encountered a bear. He tried to shoot but the rifle misfired. The bear attacked him and Mikhail lost consciousness. But bears don't like fresh meat, so he [the bear] dragged the man into the swamp not far from the road and covered him with moss and pieces of bark. They [bears] usually do this, and when the meat begins to rot they return and eat it. Mikhail's dog found him in the swamp, dug him up, and barked loudly until some other person came and took Mikhail home. The elder people said that the bear would return after Mikhail. The men from the village went to that place to kill that bear. But he [the bear] never returned".

The last account is not in line with the typical folklore story. We find the idea that a bear wants revenge, and even some men from the village start chasing him, but the bear was not found and did not appear in search of revenge. Interestingly, Mikhail does not want revenge on the bear. In this particular trait, bears are not like humans. It is possible to suppose that bears are more similar to bad humans, humans who cannot control their nature. This story is also very characteristic of the way these tales allow us to understand what happens when the hunter fails to kill. There are a lot of very short stories about someone who went to his hunting house and "has never returned" or "was not found" (Russ.: его больше не нашли). The account above is a happy-ending (more or less) variation of such stories. It is also interesting that, very much like a man, a bear leaves a killed rival and returns to the corpus sometime later. Though the intentions of bear and human in leaving the game behind are different – a bear wants it to be rotten, the human wants to return with some kind of vehicle to transport the meat – the descriptions of situations in the stories are quite similar.

All these stories about how someone has killed a bear and how a bear tried to kill someone show a lot of similar features with the narratives from the first two sections. The bear does things similar to humans, the bear has his temper, intentions, and individuality. The bear in the stories of the last section has a sex and special features in his appearance. New aspects of bear representation that we can see here are the following: First, the bear is very much like a human, but these two species are removed from other animals. In the story about the destruction of the storehouse, only bears and humans could potentially do that. Second, the bear (what it does, what it looks like) is very familiar to vozchiki people. They can draw conclusions from specific features of the bear's appearance and explain why it did this or that thing. And this "familiar attitude" is demonstrated not only in the accounts of hunters but in the accounts of the average inhabitants of the village.

When collecting the stories and sayings, it happened several times that I acquired some information that did not fit into the notion of all the previous texts and talks. This includes times when bears were classified into "grass-eaters" and "predators", a very characteristic anecdote about a bear coming to God, and other peculiarities. All this lore was told to me by hazard in a very special situation that occurs only rarely.

In 2007, during my first visit to Vozchiki, I asked Dmitriy about a story I had read in an article dating from the end of the 19th century. The story was about a sorcerer who was so potent that he could bewitch cows in such a way that a bear did not kill them but just walked and grazed among them. This shocked me and I wanted to find an explanation. When I related this to Dmitriy he stayed very calm and said: "Perhaps it was a grass-eater". I tried to ask different people about grass-eaters and predators, but all of them could only agree that such a division exists; they could not add anything to it. I once got a very similar interpretation from another friend. When I was on a three-day trip with Nikolai to the remote lakes, he once saw two bears on the grassy river bank. They were eating something calmly from the ground, one about ten metres from the other. Nikolai pointed to them and said: "Bears there. They are grass-eaters". It is rather difficult to understand the meaning of this dual classification. The only two things I can say is that this grouping is well known among vozchiki people, but it does not play a great role in any of the talks.

The other interesting point is what a hunter does when he sees an animal in his way or near him. In the course of our trip to the lakes, I saw hares, elks, and bears on the banks and in the woods near the river. If a hunter meets a hare it means misfortune. Nikolai, who was driving a boat, rotated his cap on his head 180 degrees: "It is a way to beat misfortune", he explained. There are other ways to do it; for example, by making the fig-sign with the fingers of the hand in the pocket. The encounter with the hare required a quick reaction, but it was not something really important. Nikolai never told anyone about seeing the hare.

Once Nikolai saw an elk who was intending to cross the river. He slowed down the motor and waited a bit. The elk turned back to the forest. So Nikolai accelerated and we passed that place. It was clear that he did not want to encounter or even be in the vicinity of that kind of animal. In the evening of that day, we slept in a hunting hut of Nikolai's friend and they were talking about bears and ducks, but not about elks and hares.

Twice we saw bears. The first time was the two grass-eaters, and the second time Nikolai mentioned a bear cub who had climbed the precipitous pine tree that stood close to the bank. I took a camera and took a shot. This shot – not good and not professional at all – became the main topic of several subsequent conversations. Our boat passed by that place again and Nikolai asked jokingly: "Do you want to land and take another shot, from the vicinity…", and I said: "Of course not. I don't want to face his mummy". Nikolai was very satisfied with his joke and with my answer. However, in the evening talk he said to his friend as he pointed to me: "We saw a bear cub. And he" – pointing to me – "said, let's land and take other photos. I told him: Are you a fool? His mom is there. Let's keep navigating". That provoked a burst of laughter. After our return, a lot of people in the village learned about the photo with the bear cub. It is important to point out that the situation with the bears was less dangerous from the point of view of Nikolai; however, it was the most interesting to talk about and to joke about.

The last piece of information is composed of several narrative jokes (Russ.: *anecdote*) in which the bear is the main character. The word *anecdote* has two meanings in the Russian language. The first is a more historical meaning: In the 16th–19th centuries, it was a bizarre or outstanding situation that happened to a real person. The second meaning emerged in Soviet times and, in this sense, an anecdote means a narrative joke that ends with an unexpected semantic resolution, which makes people laugh (Chamberlin 1957). Hereafter, I will use the term in the second sense.

In Vozchiki, I heard two anecdotes several times that I knew before my visit because city dwellers often narrate them. One of the anecdotes is very close to the stories presented in the previous part of the text. "A tourist is eating his breakfast in the forest, and suddenly a bear appears. The bear asks: 'Who are you? What are you doing?' The tourist answers (showing the bear a tin with the title 'Tourist's breakfast'): 'I am a tourist. I am eating my breakfast'. 'No', says the bear – 'the tourist is me, and you are the tourist's breakfast!'" I heard this anecdote several times. Once it was a quotation. A person addressed my students and me before we went into the forest: "So, you go to the forest, tourist's breakfasts?" This anecdote has a lot of common features with other stories about bears; the bear stands as a synonym of man, it is also a tourist, it also likes breakfasts. It is possible to talk to him. Moreover, he has a sense of humour, joking about the tourist and making a pun.

However, in other anecdotes, hares, wolves, foxes, and all other animals can do that. In Vozchiki, my friend Mikhail told me an anecdote that is very specific to the local culture. "A bear comes to God and asks: 'Why are humans so chatty? Every time I meet a human I don't run through the forest shouting: I have met a human!'". In fact, what we see in this story is not a question but a complaint. The bear says that humans are too chatty, and he is better than them (us). In this account, we can see the maximum degree of humanisation of the bear: It can come to God and paradoxically explain to him that humans are not as human as the bear. The bear is more fearless, sober, and equable. All these traits are perceived as human and are opposite to those of an animal. So, in this last story, the bear and the human change roles. The bear is depicted here as more human and more dignified than a human.

Is equality in the bear-human relationship possible?

In my speculations, I will follow the mainstream idea of a recent article by Harry Walker, entitled "Equality without equivalence", in which he writes that scholars should approach the idea of equality from a different direction. They/we should not start with the idea of sameness as a basis of equal relations, but should try to trace these relations in a situation such as we have with humans and bears: The counterparts are absolutely "not the same", but they are treated as the same. The Amazonian example of the Urarina people shows "not egalitarianism but a tendency towards what I shall call 'equality without equivalence'" (Walker 2020, 149). This starting point is very important in Walker's speculation because it allows him to show that equal relations can be of a different kind; they cannot be reduced to sameness: same appearance, sameness in relations, mathematical identity in measurable characteristics (height, life length, or the area of habitation space). In my case everything is quite the opposite: Humans and bears cannot be the same, cannot have same appearance, cannot have identical characteristics. However, in the people's talks, the similarity and symmetry is usually stressed.

Elaborating on Walker's ten traits of "equality without equivalence" I will demonstrate that some of those tendencies can be found in "human-bear" relations as opposed to "human- other animal" relations. These ten particular traits of social interactions are, as he says, "interrelated ways" in which the Urarina people "refuse equivalence" and at the same time share "a particular conception of the common" (Walker 2020, 150). Walker does not use the term "individual" because it is too Eurocentric, but writes about two "singularities" that can enter a relationship that creates "commonality". And thus, being a part of a whole and keeping their differences, the singularities become equal.

Out of Walker's ten points or traits, five are not relevant in my case concerning the bears (concreteness, partiality, immanence, predation, and homosubstitution). However, the other five points can be found in talks about bears, and thus these can confirm the idea that human-bear relations have a tendency to equality. These are 1) intensity, 2) singularity, 3) respect, 4) volatility, and 5) the love-pity-compassion complex. Here are Walker's explanations of these traits based on the Urarina:

1) Intensity, or the possibility "that people can often trace their genealogical relationship to each other in many different ways" (Walker 2020, 152). This means that one person may be to another not only, for example, brother/brother but also uncle/nephew and at the same time father-in-law/son-in-law;
2) Singularity, or the Urarina's "attention to individual rather than collective or group identities" (Walker 2020, 153);
3) Respect for the idea of the illegibility of others' singularities, the impossibility of understanding them clearly and, as a consequence, the necessity of respecting otherness and difference (Walker 2020, 153–154);
4) Volatility, or the idea that people often change their minds or, as Walker put it: "My friend one day is my enemy next day" (Walker 2020, 154); and
5) The "love-pity-compassion" complex is the set of interconnected "forms of emotional attunement" that lead people to share resources (Walker 2020, 156).

I will unite the five traits above into three groups. Intensity stands alone. Singularity and volatility are two aspects of the "rich inner world" of a person who can change his intentions, his ideas or expected way of behavior. The last two traits, love-pity-compassion and respect, can also be linked when we talk about bears. I have never heard a story from any Russian village inhabitants in which a human fell in love with a bear, though such a plot can be found in the folklore of indigenous peoples (McClellan 1970).

The intensity in human-bear relations is seen in almost every talk. For example, in gatherers' talks, a bear is the most frightening animal, and it is important to avoid an encounter by knocking on metal objects or singing songs. However, if an encounter takes place, it is possible to startle him by imitating a dog's barking or loud shouting. We see the same multi-layered relations in hunters' talks where the bear acts as a creature that can kill a hunter but where, however, in many cases the hunter kills the bear. It is also possible to meet him (if not face-to-face) and pass by. The bear can come from the forest and destroy a storehouse, though more often hunters come to the forest from villages to set traps and take the game, and in a sense they destroy the bear's world or "possessions". So, these relations are very different, and bears and humans often intrude on the other's territory. In human-bear relations, intensity can be demonstrated by a metaphor of a dense network of paths, each of which is two-way traffic. The relations with the hare are one-way: A hare can never kill a human. Relations with elks are more complex but not so diverse. What is also important is that hares and elks do not intend to harm people or spoil the hunting luck of humans; they are not actors but rather instruments in those situations. The bear, however, is a "person" who has his own intentions and character traits.

Singularity and concreteness are always stressed when people talk about bears. In gatherers' stories, the animal is always mentioned as "he" not "she", but also not "they", although in Russian it is usual to talk about a unknown class of subjects as "they". For example, hunters usually say about hares: "Hares, they bring bad luck". And these hares do not have personality and singularity. In hunters' stories about killing bears, people always focused on particular features of one or another bear. For example, in the story about the hunter Mikhail, the bear had to be killed because he had attacked a human and would attack him again. So the "elder people" in the account did not want revenge on any bear or on "all bears"; they understood that the bear who tried to kill Mikhail would return. People usually want to kill a specific singular bear, not every bear near the village. When talking about bears, vozchiki villagers talk about singularities, not species: The very old bear who came to the village was white, the other bear could destroy huts and open tins, another particular bear stopped his revenge and "never came back". So, we see here not just one specimen but a gallery of characters, persons, or singularities.

Respect and "love-pity-compassion" complexes are very similar when applied to bears. In some sense, and especially in my case, pity or compassion are addressed to a killed bear that was not treated

with respect. So, pity-compassion is the tails side of the coin while respect is on the heads. It is possible to see pity in general in utterances about the unwillingness to kill an animal. "What could I do? I had to shoot!" This type of sentence presupposes that a person feels a bit guilty and has pity for a killed animal. But, most clearly, respect for the bear is demonstrated in the story about the old, white bear that came to the scrapyard. Tatiana knew that the animal was old. From that, she concludes that he did not have enough strength to collect food in autumn. Marking someone as hungry in Russian culture means marking him or her as worthy of compassion. The next sentence after denoting the bear as being hungry begins with "but". And the very act of killing is perceived as a kind of forced action. That bear had its own life history and destiny, and the narrator was interested in learning more about it and understanding it. The tendency to understand (not only the actions and goals but also their intentions and their state of mind) is exactly what Walker marks as respect.

In the paragraphs above, I have demonstrated that at least three specific aspects of human-bear relations in the Russian North can show their tendency to equality:

1) These relations are very diverse and cannot be reduced to a one-way road;
2) The bears act as singularities with volatile behaviour, which cannot always be foreseen and predicted;
3) The relations with bears are strongly linked with emotionally-coloured feelings (especially of respect and compassion).

I think that these kinds of relations are not just relations between two persons – human and non-human – these are relations that have "tendency to equality".

It is also important to stress that the idea of sameness that is rejected by Robbins (1994, 34) and Walker (2020, 148) is used by the local vozchiki people. I can say that, for me, "sameness" is not a researcher's epistemological notion, but a local term that creates or helps to create relations of equality.

The "sameness" demonstrated in the stories denotes those tendencies to equality in a performative way. I think that the very possibility of seeing "tendencies to equality" that emerge in human-bear relations can expand our understanding of equality.

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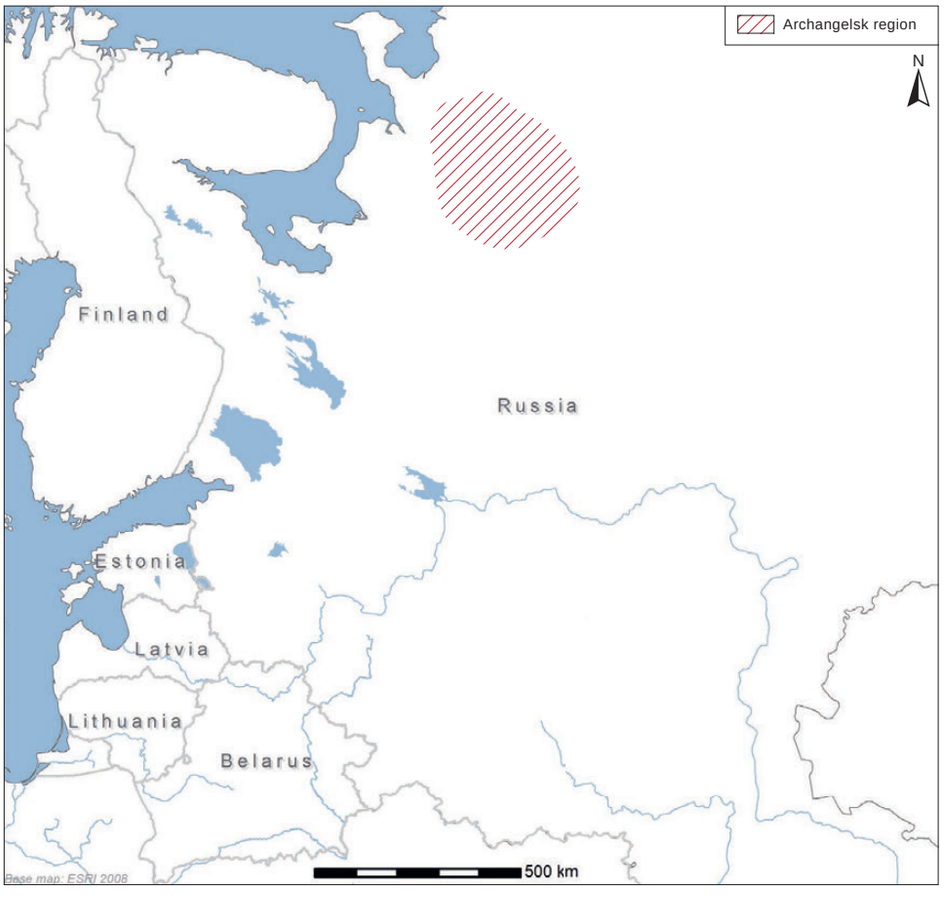


Fig. 1. Area of research interest (map GIS department, ZBSA).

Bears in philology (northern, central and eastern Europe)



One, if not the best, indication for the bear's special status is the taboo name-giving in different languages, such as "the brown one" in Germanic and "honey eater" in Slavonic. If the bear was called by its real name, so it was feared, it would overhear this and evoke disaster for humans (see Piludu*, The songs and rituals of the Finno-Karelian bear hunt, this volume; image P. Hanunen).*

Bjørnestad, *Bjørnbåsen*, and *Godfardalen:* Bear/human relations as referred to in place names from southwestern Norway

By Inge Særheim

Keywords: Bears, place names, southwestern Norway, bear hunting, taboo, noa

Abstract: This chapter deals with Norwegian toponyms referring to bear/human relations, mainly based on examples from the southwestern part of the country. Bjørn *m. "bear" is the most common word for wild animals found in Norwegian place names, denoting different types of bear locations. The original semantics of the appellative bjørn is "the brown" (animal), first used in Germanic languages as a noa word (i.e. a non-taboo substitute) for "bear", due to taboos about this animal. There are different words for "bear" in Norwegian place names, some of them found in names dating back to the 1st millennium AD, represented in ancient settlement names as well as in topographical names. Microtoponyms from southwest Norway reflect different kinds of bear/human relations in the past; a relationship that was often troublesome, as bears were regarded as a threat to cattle and people on Norwegian farms and summer mountain farms. Some names refer to old hunting methods (bear traps).*

Introduction

Place names are an important source of information regarding language, nature, and cultural history that reflect past conceptions of the landscape. Microtoponyms map animal lives onto the landscape. They reflect special – sometimes ancient – traditions and concepts; for example, those relating to bear/human relations.

Bjørn m. "bear" is the most common word for wild animals found in Norwegian place names. These names denote different types of bear locations; for example, dens and places where people have seen traces of bears, places where people – according to local tradition – have encountered and killed bears, and places where cattle have been killed by bears. One example is the microtoponym *Der bjørnen drap* (in the local dialect: *Der bjødnen dreb*), "where the bear killed", from Ven farm in Bjerkreim (southwestern Norway), denoting a cleft in the mountain where a bear, according to local tradition, once killed a living being – probably referring to cattle (Særheim 1985, 24). From most farms in this area there are place names referring to bear/human relations, and sometimes stories told about encounters with bears.

This chapter will present some place names that refer to bears, and will discuss some aspects of bear/human relations that are reflected in toponyms, mostly microtoponyms. How numerous are place names referring to bears? Where are these names found? How old are the names? What do place names tell us about the relations between bear and human? Most of the examples mentioned

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 903–920 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134370

come from southwestern Norway – Rogaland county and the bordering municipality of Sirdal (Agder county; cf. Fig. 1). In this area, a number of microtoponyms have been coined from oral sources since the 1980s.

Bear/human relations in the past

Encounters with, and the hunting of, bears in Norway is mentioned in medieval Icelandic sagas, e.g. in *Grettis saga*, which tells us that this animal is very strong and dangerous; it tears apart people's cattle, and no fence or gate is strong enough to provide protection (*Grettis saga* 1936, 74–75). In *Egils saga*, we are told that the bear is the most dangerous animal, killing both people and cattle. The cattle are therefore kept in enclosures, guarded by men with big dogs (*Egils saga* 1933, 167–168). Similar characteristics of the strength and threat of this animal are given in medieval legal documents, and in postmedieval literature. There was a medieval law order concerning the hunting of bears and special rules about hunting, e.g. about hunting bears in a den (*Gulatingslovi* 1981, 120–121).

In the past, bears were an important economical resource, providing meat, fat, and fur. However, bears have been regarded as a threat to people and cattle on Norwegian farms for a long time, especially on summer mountain farms (*seter*, *støl*), where members of the farming families used to stay with their cattle in the summer months to benefit from the mountain pasture (Reinton 1955). Bears were numerous in these areas in the past and, being strong, were regarded as very dangerous animals. Killer bears would, according to Reinton (1955), smash the shed doors or climb on top of the shed, tear off the roof and kill domestic animals such as cows, sheep, and goats, and they would often jump on domestic animals from behind. In 1745 Bendix Christian de Fine wrote that the threat of bears and wolves in some places in Rogaland was such a big problem at times that the farmers could not use their summer farms (de Fine 1952, 10).

There are many stories from all parts of Norway about people encountering bears, about bears attacking and killing cattle, and about bear hunting (Reinton 1955). According to Peder Claussøn Friis (1599), one winter, around 1560, a bear hunter from eastern Agder killed 15 bears with a steel bow. However, when he tried to kill the sixteenth one, he was attacked by the bear and thrown down a high mountain: *der falt hand i smaa Støcher*, i.e. "there he fell in small pieces" (Friis 1881a, 18; Reinton 1955, 364; Hodne 2008, 113). According to Hodne (2008, 113), the best bear hunter in Norway, Ola Olsen Messelt (1776–1869) from Stor-Elvdal (Hedmark), killed around 130 bears. There was a bounty for killing such animals. In the municipality of Hjelmeland (Rogaland), bounty was paid for 24 bears in the period 1760–1766; Per Vrålson from Vormeland shot seven big bears in 1766 (cf. Stavanger Aftenblad, 02.02.1969). According to Reinton (1955, 356), between 219 and 325 bears were shot in Norway every year in the period 1846–1850, i.e. on average more than 265 every year.

The bear is well represented in Norwegian folk tradition and folklore, often as a magical and mystical creature (see Böldl, this volume). In the past, it was believed that people skilled in magic were able to make bears kill other people's cattle and that some people, appearing in a bear hide, could carry out such evil-minded actions themselves (Hodne 2008, 113–116). In some fairy tales, the bear appears with human traits. Farmers and fishermen were in some situations unwilling to mention the bear, due to superstition; a non-taboo substitute – so-called noa – was used instead.

The appellative *bjørn* – first used as a noa word for "bear" due to the taboo

Several words for "bear" are represented in Norwegian place names. The most common one is, as mentioned, Norw. *bjørn* m. "bear". This word appears in microtoponyms like *Bjørndalen* "bear

valley" and *Bjørnshi* "bear's den"; both names are common in the municipality of Sirdal and many other places in Norway.

The appellative Norw. *bjørn* developed from the Old Norse (ON) *bjǫrn*, Proto Nordic **bernuR*, which appears as an old *n*-stem in Germanic: **beran-*. The Scandinavian *bjørn* (Swedish *björn*) is related to the English *bear*, German *Bär* and Dutch *beer*. This appellative is most likely formed from the same root as the adjective Norw. *brun* "brown" (Indo-European **bhero-* "brown"), containing the Indo-European root **bher-* "shining, light brown", also represented in the Norw. *bever* (ON *bjórr* m.) "beaver" (Hellquist 1948, 76; Nielsen 1991, 54; Bjorvand/Lindeman 2000, 78).

The original semantics of the appellative *bjørn* is thus "the brown" (animal), most likely first used in Germanic languages as a noa word for "bear", due to the taboo connected with this animal. The word "noa" (from Polynesian) refers to lifting a taboo from a person, animal, or object by using a harmless non-taboo substitute. This and other noa words for "bear" are used to keep the animal away, which is an indication of superstitious beliefs (Hellquist 1948, 76; Nielsen 1991, 54; Bjorvand/Lindeman 2000, 78). One should not mention the bear with the normal – correct – word, which would be to summon the animal; if doing so, it was believed that the bear would come. In other Indo-European languages, an earlier word(stem) used for the bear was, like the Latin *ursus* and the Greek *árktos*, formed from a root with the meaning "the destroyer". There are noa words for "bear" in many Indo-European languages (Nielsen 1991, 54).

Some other words for "bear" in toponyms

A word for "she-bear" found in toponyms is ON *bera* f.; this word is related to *bjørn*. An example from southern Rogaland is the farm name *Berjod* (Sokndal), spelled *Berurjóðri* (dative) in the 1200s, with the final element ON *rjóðr* n. "open place, clearing in forest". Examples from northern Rogaland are *Berdalen* (ON **Berudalr*), a valley in Sauda, and *Berakvam* (ON **Berahvammr*), a farm in Suldal; *kvam* m. refers to a "grassy hollow, short valley". The first two names mentioned might, however, contain an old river name, ON **Bera* f., related to ON *bera* f. "female bear" (Særheim 2007, 28–29).

The word ON *bersi* m. "he-bear", which is also related to *bjørn*, most likely appears in the toponym *Bersetjørn*, denoting a small lake (*tjørn* f.) in Hå (southern Rogaland). An apparently similar toponym, the uncompounded *Berse* (ON **Bersi* m.), denotes a lake in Bjerkreim (southern Rogaland; cf. Fig. 2). However, this name most likely reflects an independent derivation with an *s*-suffix to the stem **ber-* in ON *bjǫrn* m. "bear"; in other words, it is probably not formed from the appellative ON *bersi* m. Parallels are the river names *Bessa* in Jotunheimen (Vågå) and *Besso* in Hardanger (Eidfjord), reflecting ON **Bersa* (**Bessa*) f. (Rygh 1904, 10–12). Such derivations with an *s*-suffix are believed to be very old.

ON *balti* m. "bear" probably appears in the coastal name *Balten* (Hovda 1941, 13), denoting a rock in the sea in the entrance to Hesbyvågen bay (Finnøy, northern Rogaland). The appellative *balti* m. is used in Old Norse poetry, and ON *Balti* is also a male nick-name. According to Hovda (1941, 13), the name is misspelled *Galten* on some maps, probably because *Galten* is a common name denoting sunken rocks in this area (cf. Norw. *galt* m. "hog").

Binna, ON **Birna*, is found as a river name in Norway (Rygh 1904, 13). The name is an old derivation from the stem in ON *bjǫrn* m. "bear". A similar derivation is the appellative Norw. *binne* f. "she-bear", ON *birna* f.

The first element of the farm name *Bangsberg* from Ringsaker (Hedmark), spelled *Bangsberg* in 1723, has been interpreted as ON *bangsi* m. "bear"; this word is still used in Icelandic, cf. also the related Norw. *bingse* f. "she-bear" (Rygh 1900, 19–20). The first part of the farm name *Bamsrud* from Eidsberg (Østfold), spelled *Bangnsrud* approx. 1570, however, has been interpreted as the identical

male name ON *Bangsi*, first used as a nick-name (Rygh 1897, 154). The appellative ON *bangsi* m., which originally was probably a pet name, is most likely derived from the verb *bangsa* "walk heavily and clumsily". The word *bamse* m., used as a pet name for "bear", is related to ON *bangsi* "bear", referring to something bulky and clumsy.

The Norw. *godfar* m. with the semantics "grandfather" (< "good father") is found in many Norwegian place names. This word is as an appellative also used as a non-taboo substitute – a noa word – for "bear". The use of *godfar* for "bear" is probably also represented in some microtoponyms from mountainous areas, such as *Godfardalen* (valley), found in Sirdal locations (Særheim 2019).

Settlement names with *Bjørn-* as the first element – "bear location" or "Bjørn's farm"?

The word *bjørn* m. (ON *bjǫrn* m.) "bear" and related word forms appear in quite a few old farm and settlement names in Scandinavia. In Norway, it seems to be represented in different types (classes) of farm names; for example, in names ending in ON **-vin*, *-heimr*, *-land*, *-staðir*, *-þveit*, *-bór/-býr*, *-holt*, and *-ruð*. It is sometimes difficult, however, to decide whether some of the names contain the appellative ON *bjǫrn* "bear" (Norw. *bjørn*) or the related – formally identical – male name ON *Bjǫrn* (Norw. *Bjørn*).

ON **-vin* "meadow" is the final element of the farm name *Bidne* from Voss (Hordaland), ON **Birnin* (Rygh 1910, 561, 568; cf. Fig. 3). The first element represents the stem **bern-* "bear", found in ON *bjǫrn* (< **bernuR*). Most of the 1,000 Norwegian settlement names of this type (**vin*-names) are believed to have been formed before approx. AD 800. Names belonging to this name class do not contain personal names as the first element.

ON *-heimr* m. "home, place of abode" is the final element of the farm name ON *Bjarn(h)eim(a)r*, found in Norway, in Bærum (Akershus; ON *Bjarn[h]eimr*; Rygh 1898, 147) and Sandefjord (Vestfold; ON *Bjarn[h]eimar*, plural; Rygh 1907, 263–264). The first element is ON *bjǫrn* m. "bear". Most of the 1,000 old Norwegian settlement names ending in ON *-heimr* are believed to have been formed before approx. AD 600. Names of this class do not contain personal names. There are also two parallel names in southern Scandinavia, i.e. *Bjørum* in northern Jutland (Jylland, Denmark), and the similar *Bjärnum* in Scania (Skåne, Sweden).

ON *-land* "(piece of) land" is the final element of the farm name *Bjørnland* from Tune (Østfold), spelled *Bjœrnaland* approx. 1430 (Rygh 1897, 294–295). A similar name is found in Bohuslän (Sweden), spelled *j Biarnlandum* approx. 1400. The first element has been interpreted as either the appellative ON *bjǫrn*, referring to bears, or the identical male name *Bjǫrn*. Most of the 2,000 old Norwegian farm names ending in *-land* are believed to have been formed before AD 1000.

Bjørn- is also represented as a first element in other types of old farm names, e.g. in names ending in *-by/-bø* (ON *Bjarna[r]býr/-bór*), *-set* (ON *Bjarna[r]setr*), *-tveit* (ON *Bjarnaþveit*), *-holt* (ON *Bjarna[r]holt*), and *-rud* (ON *Bjarna[r]ruð*). In many cases, however, it is difficult to decide whether the first element in such names refers to bears or to a man called *Bjørn*. Most of the 1,100 *by-/bø*-names, 900 *set*-names and 600 *tveit*-names date to the Viking Period (800–1050). However, some are older and some younger, whereas most of the 400 *holt*-names and more than 3,000 *rud*-names were formed in the following period (1050–1349).

ON *-staðir*, Norw. *-stad*, is the most common final element in old Norwegian farm names with the first element *Bjørn(e)-*. In Norway, there are approx. 47 *Bjørn(e)stad*, i.e. 27 *Bjørnstad* and 20 *Bjørnestad* (cf. Fig. 4). The first element of the *stad*-names has traditionally been interpreted as a personal name, most often a male name. There are, however, reasons to question this opinion. Researchers today tend to see fewer personal names and, more often, other types of first elements in the *stad*-names. Approx. 30–40 % of the *stad*-names from Rogaland probably contain a personal name

(Særheim 2006), not 80–90 % as earlier believed (Rygh 1915). It does not seem likely that as many as 47 Norwegian farm names ending in *-stad* have the male name *Bjørn* as the first element. The other frequent male names as a first element in *stad*-names have fewer than 20 representatives each, e.g. *Arne/Ørn*, *Eirik, Finn*, *Grim*, *Harald*, *Orm*, *Reidar*, and *Roald*. Some of the *Bjørn(e)stad*-names appear in typical bear areas, and it seems reasonable to interpret the first element in quite a few of them, probably more than half of the 47 *Bjørn(e)stad*-names, as the word *bjørn*, referring to bears, in other words "bear locations", i.e. ON *Bjarn(a)staðir* (not **Bjarnarstaðir*). Most of the 2,500 Norwegian farm names ending in *-stad* are believed to have been formed before AD 1000.

Such old settlement names containing a word for "bear" are indications that bear/human relations referred to in place names are very old. The same can be said about some old topographical names, e.g. a lake name like *Berse* (ON **Bersi*) and river names like *Binna* (ON **Birna*), *Bessa*, and *Besso* (ON **Bersa*); such names might have been formed in the first millennium AD.

Microtoponyms referring to bears from Morka farm (Gjesdal)

The municipality of Gjesdal (Rogaland) was, in the past, a typical bear area. A number of place names from Gjesdal refer to bear/human relations. Morka farm may serve as an example. From this farm, where approx. 300 microtoponyms have been coined from oral sources, as many as eight names refer to bears (Særheim 1985, 108). No other wild animal has that many representatives in toponyms from this farm. Most of the "bear"-names are found in the mountainous area, where people stayed in the summer months with their cattle.

The toponym *Bjørnshi* (pronounced *Bjønns-* in the local dialect) refers to a den (*hi* n.), whereas *Bjørnahola* (*Bjødna-*; found in two places) refers to a "hollow" and *Bjørndalen* (*Bjønn-*) to a "valley". *Bjørnberget* (*Bjønn-*) denotes a mountain (*berg*), *Bjørnasteinen* (*Bjødna-*) a rock, and *Bjørnaklampen* (*Bjødna-*) a small mountain (big rock). There are also microtoponyms from Morka referring to other wild animals, e.g. wolf (*Ulvaberget*, *Ulvakjelda*, *Skrubbatørne*), fox (*Revasteinen*, in two places), and lynx (*Gaubestørne*).

Stories are told about the killing of bears in the early 1800s, linked to a couple of the "bear"-names from Morka. One story refers to the rocks of *Bjørnasteinen* and *Bjørnaklampen* on the mountain. It tells us that a bear was shot, and the hunter was about to stab it. However, the bear livened up and set off for the man. He managed to climb *Bjørnasteinen* rock where he loaded his gun (muzzle-loader) and shot the bear dead.

An interesting name from Morka is *Godfarbekken*, denoting a stream coming from *Bjørndalen* ("bear valley"). The first element, *godfar* "good father", normally means "grandfather" when used in Norwegian place names. However, this word is also used as a noa word (name) for "bear" in Norwegian dialects, i.e. a word used instead of the normal word in order to keep bears away from people and cattle. This use of the word seems to be represented in some microtoponyms from south-western Norway, and the interpretation of the name seems reasonable, due to the many occurrences of "bear"-names from this farm, and the fact that this stream comes from *Bjørndalen*. A somewhat parallel example from Fintland farm (Sirdal) is the *Bjørnbekk* stream (*Bjønn-*; "bear stream"), which runs through the *Bjørndalen* valley (*Bjønn-*; "bear valley").

The many "bear"-names coined from oral sources for this single farm (Morka) reflect how important and close bear/human relations were on many Norwegian farms in the past. The local tradition linked to some of the names indicates that this relationship was regarded as problematic.

The valley – and municipality – of Sirdal is a mountainous area in northwestern Agder, southern Norway. Sirdal borders Bjerkreim, Gjesdal, Forsand, and Hjelmeland in Rogaland. There are hundreds of summer mountain farms in this area. In the different volumes of the history books of Sirdal, there is some information about people who have hunted bears. A bear hunter from Tveiten farm, Atlak Svensen (1842–1901), called *Atlak bjødneskyttar* ("bear-shooter") shot 19 bears, whereas Ole Olsen (1822–1912) from Valevatn shot 15 (Seland 1980, 382, 438). The last bear was killed in Sirdal (Ausdal) in 1910, whereas the wolves had already disappeared *c.* 1860 (Seland 2011, 200). No person is reported to have been killed by bears or wolves in Sirdal (Seland 2011, 56). Some bears were given a name; for example, *Skakkefot* ("crooked foot, tilted foot"), who had hurt his leg (Seland 1987, 216). Approx. 12,000 microtoponyms are coined from oral sources in Sirdal. As many as 80 of them have a first element *Bjørn-* (pronounced *Bjønn-* or *Bjødn-*), *Bjørns-* (*Bjønns-*), or *Bjørne-* (*Bjødne-*), referring to bears (Særheim 1992, 209–213). No other word for wild animals is used this much in Sirdal place names.

Twenty-eight different words for topographical features are used as final elements. Most common are names like *Bjørnetona* and *Bjørnstørnan(e)* (plural), containing *-to* ("mountain shelf"), found in 18 places, often referring to a den. *Bjørndalen* and *Bjørnedalen*, with the final element *-dal* ("valley"), is found in ten places, whereas *Bjørnshi* (*-hi* "den") and *Bjørnehola* (*-hola* "hole, cave", often referring to a den) are each registered in seven places. There are five names ending in *-kvæv* ("short valley, grassy hollow"), *Bjørnekvæven*, and also five ending in *-hom* ("short valley, grassy hollow"), *Bjørnhom*, *Bjørnehommen*, *Bjørnehomma*.

The final element *-bakke* ("hill") is found in four toponyms referring to bears: *Bjørnsbakken*, *Bjørnebakken* and *Bjørnebakkan(e)* (plural). Three names contain *-li* ("mountain side"): *Bjørnsli*, *Bjørneli(a)*, whereas there are two names ending in *-ås* ("mountain ridge"), *Bjørnås(en)*, and *-sti* ("path"), *Bjørnestien*, the latter referring to a path used by bears, according to the local tradition.

Some names contain a topographical word for a wet element: *-bekk* ("stream"; *Bjørnbekk*), *-høl* ("hole in a river or stream"; *Bjørnhøl*), *-myr* ("bog"; *Bjørnmyra*, *Bjørnemyran*), and *-øy* ("island"; *Bjørnøyna*), each of these is found in two places. There is also one example of the final elements *-å* ("river"; *Bjørnåna*), *-tjørn* ("small lake"; *Bjørnstjørn*) and *strond* ("lake side"; *Bjørnestronda*).

Other final elements represented (each used in one name) are: *-stein* ("rock"; *Bjørnesteinen*), *-urd* ("pile of rocks, rocky mountain side"; *Bjørnurda*), *-fjell* ("mountain"; *Bjørnefjellet*), *-haug* ("mound"; *Bjørnehaugen*), *-hei* ("mountain plateau"; *Bjørneheia*), *-klamp* ("big rock"; *Bjørneklampen*), *-red* ("ridge"; *Bjørneredet*), *-skard* ("mountain pass"; *Bjørnskardet*) and *-sprang* ("leap"; *Bjørnespranget*).

In one toponym ending in *-støl* ("summer mountain farm"; *Bjørnestøl*), and one ending in *-slåtte* ("hayfield"; *Bjørneslåtta*), it is difficult to decide whether the first element is the word *bjørn* m. "bear" or the similar male name *Bjørn*; most likely it is "bear" due to the form of the first element (*Bjørne-*).

Three to four names with the first element *Bjørn(s)-* do not refer to bears, but to a male person with the name *Bjørn*, e.g. *Hagen av Bjørn* ("Bjørn's enclosure"). Other examples are *Bjørnåger* ("Bjørn's field") and *Bjørnsflekk(en)* ("the small field of Bjørn").

Thirteen microtoponyms from Sirdal have *Godfar-* as the first element. Most of these seem to refer to bears, containing a noa word for "bear", *godfar* ("grandfather", < "good father"), due to the taboo. This might also be the case with the name of the mountain named *Gamlefarknuden* in Sirdal.

The many microtoponyms from Sirdal containing a word for "bear", i.e. approx. 80 with the appellative *bjørn* "bear" and 13 with the word *godfar*, give an impression of how important – and challenging – bear/human relations were in earlier days in Sirdal and many other places in Norway. As mentioned, *bjørn* is by far the most numerous word for wild animals appearing in Norwegian place names (Indrebø 1924, 22; Slyngstad 1951, 74). There are also words for other wild animals (of

prey) represented in the microtoponyms from Sirdal, e.g. wolverine (one name, *Erveknuden*), wolf (24 names, *Ulvshidalen*, *Skrubbsodden*, *Gråbeinbakken*), fox (37 names, *Melrakkhaugane*, *Revurda*, *Mikkjelskardet*), and lynx (two names, *Gaubåsen*). Names like *Gråbeinbakken* and *Mikkjelskardet* probably contain noa words for wolf (*gråbein* "grey legs") and fox (*mikkel*). Many other types of wild animals are also represented in Sirdal place names; for example, *c.* 40 names referring to reindeer, including *c.* 20 names with the first element *Dyr(a)-*, containing *dyr* n. "animal", in this context referring to "reindeer".

Bjørnbåsen – a bear trap

An old hunting method (the bear trap), called *bjørn(e)bås* ("bear stall", "bear box") is mentioned in Old Norse literature as ON *bjarn(ar)báss* "enclosure, pit for catching a bear, bear trap", e.g. in *Jomsvikingar saga*, *Magnus Lagabøte's law* and the Swedish law, *Helsingelagen*. A so-called *bås* ("stall, box") was used to catch bears, wolves, wolverines, lynxes, and foxes. Friis (1881b, 311; original text from 1613) mentions *bås* to catch wolves.

This hunting technique, as used by Swedish farmers, is described by Keyland (1906, 12–13) as a small house (wooden enclosure) with an opening at one end where the animal could enter. The roof was loose, not fastened to the two long walls and rested on the back wall; the roof was piled (stacked). When the animal took the bait, the front part of the roof would fall down and the animal was shut in and trapped. However, wooden or stone-built bear traps are not known from southwestern Norway, only naturally formed rock enclosures.

The word *bjørnbås* appears in place names – *Bjørnbåsen*, pronounced *Bjønnbåsen* in the local dialect – in several places in southern Rogaland, e.g. in the municipalities of Sokndal, Eigersund, Sandnes (from Høyland, Høle and Osaland farms), Forsand (from Hatleskog and Underberge farms), and Gjesdal (from Østabø, Mjåland and Brådland farms). Eldar Molaug comments on the four last-mentioned places in his cand. philol. thesis (Molaug 1934) on place names from Forsand (and Gjesdal). He writes that there is an old, oral tradition about hunting bears linked to such locations and names. Some places with this name are found close to summer mountain farms; for example, close to Brådlandsstølen (Gjesdal) and Bergestølen (Forsand), probably reflecting the great challenge that bears and other wild animals represented in such places. However, in Rogaland, *Bjørnbåsen* is a more common place name in lowland landscapes than in mountain and summer farm areas. Some of the places are situated close to the sea (fjord). The known hunting sites in this area are mountain clefts or rock enclosures into which bears were chased, trapped and killed.

One of the sites in Rogaland is mentioned by Svein Molaug (Molaug 1956, 669). This is probably *Bjørnbåsen* in Mjåland (Gjesdal), which is situated at the foot of a big mountain cleft (ravine), called *Bjørnbåsjuvet* (Figs. 5–6). There is a huge pile of rocks below the ravine. Molaug points out that the ravine probably served as walls of the *bjørnbås*. In this enclosure, there was no place from which the bear could escape.

Bjørnbåsen in Hatleskog (Forsand, now Sandnes Municipality) is a cleft or pass on *Bjørnbåsknuden* Mountain, close to the River Dalaåna in the valley of Daladalen (Songesandsdalen). This *bjørnbås* is located quite close to the farm houses, less than 1 km from Hatleskog farm, and close to Lysefjorden Fjord.

Bjørnbåsen in Trodal (Høle, Sandnes) is a narrow and steep valley and mountain cleft with big rocks. Bears were probably chased into this cleft, where they were trapped and killed. This *bjørnbås* is located right on the fjord (in the bay of Trodalsvågen in the fjord Hølefjorden). Another *Bjørnbåsen* can be found not far from the one in Trodal, on Osaland farm (Høle, Sandnes). This is a narrow mountain pass, between the mountains of Tverrfjellet and Litlelifjellet (Fig. 7). As was the case at

Trodal, the bears were most likely chased into this pass, where they were trapped and then killed. According to the local oral tradition in Høle, the two *Bjørnbåsen*-names refer to locations where bears were hunted and killed.

The uncompounded place name *Båsen* ("the stall", "the box") might, in some cases, refer to a bear trap (*bjørnbås*). This name is coined from several places; for example, from Ven farm (Bjerkreim), denoting a cleft in the mountain close to the mentioned *Der bjørnen drap*. This cleft might have been a bear trap. Several toponyms from Ven have *Bjørna-* (pronounced *Bjødna-*) as a first element, referring to bears; for example, *Bjørnatona* (a mountain shelf, maybe referring to a den), *Bjørnakråna* ("crook, corner"), and *Bjørnadølda* ("hollow"), which refers to a location where a she-bear is said to have given birth to cubs. Wild animals such as bears and wolves represented a big problem in this area. Ven's old summer mountain farm, Gamlestølen (also called Heimre stølen), was moved from the River Raudåna to a safer location, due to the threat by wild animals.

In Rogaland (and Sirdal), there are also place names referring to a *bås* to catch other types of animals, e.g. *Revabåsane* in Hompland (Sirdal; referring to "fox"). Other types of old hunting techniques are mentioned in toponyms too; for example, *lem* "shutter" in *Skrubbelemshovudet* ("wolf") and *Ørnelemmen* ("eagle"), both from Sirdal. Another example is *stokk* "log", e.g. in *Jasastokken* (from Suldal; "hare"). Some microtoponyms from different parts of Norway containing the words *bjørn* "bear" and *stokk* "log", e.g. *Bjørn(e)stokken*, most likely refer to places where bears have been hunted and killed by a log falling down and hitting the animal when it was taking the bait. Another method is referred to in the place name *Sjavskotet* ("self" + "shot"; a spring gun) from Setesdal (northern Agder); the bear was shot by a mounted gun when he took the bait (Skjevrak 1953, 13). These and other trapping and killing methods for bears and other wild animals are mentioned by Friis (1881a, 18–24), Keyland (1906), Skjevrak (1953, 12–15), Reinton (1955, 364–365), and Molaug (1956, 664–670).

Godfar – a noa word for "bear" in microtoponyms?

Several Norwegian toponyms contain a first element *Godfar-*, often pronounced *Goffa(r)-* or *Gofa(r)-*. In most cases, this is interpreted as the appellative *godfar* m. "grandfather", with the adjective *god* "good" and the appellative *far* m. "father". However, as mentioned above, the appellative *godfar* is, in Norwegian dialects, also used as a noa word for "bear" (Solheim 1940, 78; Reinton 1955, 356; NO 4, 555). Is there reason to believe that this use of the word is also represented in some microtoponyms; for example, denoting topographical features in areas where it is well known that bears would appear and that they were a big problem to people and cattle?

Solheim (1940, 79) writes that there is much evidence that people, especially cattle farmers, from the Nordic countries were unwilling to mention the bear. According to the tradition from Sande (Sunnmøre), one should not mention the bear when working in the forest, but say *svarten* ("the black") instead (cf. the original meaning and use of the appellative *bjørn* ["the brown"]). Fishermen from Sunnmøre did not mention the bear, but said *svartekaren* ("the black guy") instead. In Hordaland, Solheim (1940) tells us that people in Masfjorden said *den svarte* ("the black") when referring to the bear, and people in Bruvik said *gofar* (i.e. *godfar* "good father", "grandfather"); these terms were used as noa words.

In Setesdal (Agder), bordering Sirdal, it is said (Skar 1961, 156) that shepherd boys watching the cattle in the mountains used the word *goffa* (i.e. *godfar*) when a bear was approaching the cattle; they spoke gently to the bear asking him to go away (cf. also Skjevrak 1939, 52). One saying was: "*Lo'ne goffa gakk ifrå! Mi e små*", i.e. "Woolly goffa walk away, we are small", or "*Å goe goffa, gakk at bakkjen å set seg!*", i.e. "Oh, good goffa, walk to the hill and sit down" (Skar 1961, 156). In his book

on the life on summer mountain farms in Norway, Reinton (1955, 356) writes that people tried to keep the bear away by using other words; for example, *bamse* and *goffa* ("good father", "grandfather"). Other examples are *bamsefar* ("-father", "he-bear") and *bamsemor* ("-mother", "she-bear").

As mentioned, the word *godfar* m. appears in several Norwegian place names; for example, referring to fields on a farm. Normally, this word is interpreted as "grandfather", which seems reasonable. But, in some cases, there is reason to believe that the word refers to "bear", used as a noa word (Særheim 2019).

In an area in Ognaheia, the southern, upper and somewhat higher parts of the low-lying coastal area of Jæren (Rogaland), there are four locations with a name containing the first element *Godfar-*, i.e. *Godfarfjellet* (*fjell* n. "mountain"; Fig. 8) and *Godfartona* (*to* f. "mountain shelf", often referring to a den) – the last mentioned of which is found in three places (Særheim 2019, 63–66). Ognaheia is a rocky landscape used as pasture for sheep, goats and cows. In the past, wild animals such as bears, wolves, lynx, and fox were numerous in this area, and several microtoponyms refer to hunting; for example, *Fella* ("the trap") and *Skrubbaglepsa* ("wolf snap"). There are many microtoponyms referring to bears and other wild animals in this area; for example, *Bjørnkula* ("bear mountain top") and *Bjørndalen* ("bear valley"), both situated close to Godfarfjellet (Fig. 8). Another name from this area is *Bjørnshivatnet* ("bear's den" + "lake"), referring to a bear den. The location where the den is situated is now called *Bjørnahola* ("bear hole"). A small lake close to Bjørnshivatnet is called *Bersetjørn*, containing another word for "bear": *berse* m., ON *bersi* m. "male bear". The local tradition and the microtoponyms from the area – i.e. the toponymic milieu – support the interpretation of the first element in the toponyms *Godfarfjellet* and *Godfartona* as a noa word for "bear".

In the mountains of Sirdal Municipality there are 13 place names with the first element *Godfar-*, coined from five different places (Særheim 2019, 66–69). From the mountain plateau of Ådneram farm, there are four names: *Godfardalen* ("valley"), *Godfarskardet* ("mountain pass"), *Godfartjørnene* ("small lakes") and *Godfarlonene* ("narrow pools, river extensions"; Fig. 9). Three names are coined from the mountain plateau of Liland: *Godfartjørna* ("small lake"), *Godfarknuden* ("mountain top") and *Godfarlega* ("resting place for cattle"). Two names are known from the mountains of Ausdal: *Godfarsdalen* ("valley") and *Godfarstjørna* ("small lake"). The names *Godfarlia* ("mountain side") and *Godfarmyra* ("bog") are found on the mountain farm of Finsnesheia, and *Godfartjørn* ("small lake") and *Godfarslåtta* ("hayfield") on Espetveit farm.

All of the *Godfar*-names from Sirdal are found in the mountains; the names from Ådneram and Liland approx. 14 km (as the crow flies) from the farm houses and the ones from Ausdal 8.5 km from the farm. In Sirdal there are, as mentioned, more than 80 microtoponyms with the first element *Bjørn-* referring to "bear", and several names refer to other wild animals, such as wolverine, wolf, mountain fox, and lynx, in addition to eagle, falcon, hawk, etc. The *Godfar*-names seem to be linked to areas with mountain pasture and mountain farms, where people stayed during the summer months with their cattle. In these locations they were especially exposed to the threat of the wild animals.

It seems most reasonable to interpret the first elements of the 13 *Godfar*-names from Sirdal, or at least most of them, as a noa word for "bear". They all denote locations in the mountains, in typical bear-areas, far from the respective farms. It does not seem likely that the first elements of these names could be interpreted as "grandfather". The place names containing words for family relations, for example, *Godmorsåger* ("grandmother's field") and *Farbrorsåger* ("uncle's field") from Sirdal, most often denote locations close to the farm houses. This is an indication that *godfar* in the mentioned names from the mountains does not refer to "grandfather" but rather to "bear".

Another microtoponym from Sirdal that should be discussed in this context is the mountain name *Gamlefarknuden* (Fig. 10), located in the area with summer mountain farms at Suleskard, only 5 km from the area with five *Godfar*-names on the neighbouring Ådneram farm (Særheim 2019, 69). Close to *Gamlefarknuden*, there are eight toponyms with the first element *Melrakk(e)-*, containing the

appellative *melrakke* m. "mountain fox". The appellative *gamlefar* (*gamalfar*) "the old father (man)" is also used with the semantics "grandfather". In the toponym *Gamlefarknuden,* this word should probably be interpreted as a noa word for "bear", due to the location of the mountain, the toponymic milieu, and the local tradition and superstition concerning this animal.

The mentioned *Godfar*-names from Sirdal, Ognaheia (Hå), and Morka (Gjesdal), as well as the *Gamlefar*-name from Suleskard most likely reflect the troublesome bear/human relations on Norwegian farms and summer farms in the past. The bear was a permanent threat to people and cattle. For this reason, people often used noa words instead of the real word, to keep the animal away.

Words for "bear" that are taboo in toponyms denoting rocks in the sea

Words for "bear" are also found in coastal names, often denoting dangerous sunken rocks in sailing routes. Examples from Sørlandet, the southern coast of Norway, are *Bjørnen* "the bear" and *Bjørneskjer* "the bear rock". These names are found in several places; for example, in Mandal, denoting rocks in the sailing route entering a harbour. *Bjørn* m. "bear" is the first element of names like *Bjørnbåen* (Sunnmøre), a very dangerous sunken rock (*båe* m.) with the biggest breakers in the area, and *Bjørnafluna* (Jæren), a rocky bank (*flu* f.) with big breakers in the sailing route. A rock in the sailing route entering the bay and harbour of Hesbyvågen in Finnøy (northern Rogaland) is, as mentioned, called *Balten*. The name probably contains the Old Norse word *balti* m. "bear", a word used in Old Norse poetry.

Some words for animals – domestic as well as wild – were taboo among seamen; using them was believed to lead to bad fishing or shipwreck. Mentioning certain landmarks by their normal name was also believed to lead to disaster. Such names were taboo as well. Another word or name, i.e. a noa word (noa name) was used instead. This tradition is recorded in literature from the Norwegian coast from the early 17th century (Friis 1881b, 298; original text from 1613) to the present day, and from many other places in northern Europe (Solheim 1940). From Shetland, Jakobsen (1928–1932, 63, 66, 69, 74) mentions different Norn noa words used by seamen, e.g. 18 words for "horse", seven for "cow", 11 for "sheep", 13 for "pig", five for "dog", and 22 for "cat".

For some parts of the Norwegian coast, Solheim (1940, 141–145, 162–163) mentions traditions and behaviour linked to certain locations, for example, to (pretend to) stab, greet, or make sounds like a pig, and to stab or roar like a bull. To prevent disaster, one should e.g. pretend to stab the bear when sailing past *Bjørnøy* ("bear island") in Talvik (Finnmark). *Bjørneflua* rock ("bear" + "rocky bank") in Hustad (Romsdal) is regarded as a very dangerous location. In the local tradition this used to be a taboo name. Mentioning the real name was believed to lead to shipwreck.

Concluding remarks

The word *bjørn* m. "bear" is by far the most used word for a wild animal found in Norwegian place names. Several words for "bear" and derivations of word stems referring to "bear" appear in Norwegian place names. The number of local microtoponyms in oral tradition containing a word for "bear" has been illustrated by examples from Morka farm (Gjesdal, Rogaland) and the municipality of Sirdal (Agder). The high number is due to the fact that bears in the past were a continuous threat to people and cattle on Norwegian farms. Such names are also numerous in mountain areas, where farmers stayed in the summer months with their cattle on farms. The name *Bjørnbåsen* appears in several places, often close to farm houses, reflecting an ancient method of trapping and killing bears. Some microtoponyms, e.g. some names with the first element *Godfar*-, seem to contain a noa word

for "bear", which was probably used as a non-taboo substitute in order to keep the bear away. This way of naming reflects the troublesome bear/human relations. Some toponyms containing words for "bear" are very old, e.g. some settlement names (**vin*-names, *heim*-names, etc.), and lake and river names formed as derivations with old suffixes (*Berse*, *Bessa*, etc.). Some of these names date back to the 1st millennium AD.

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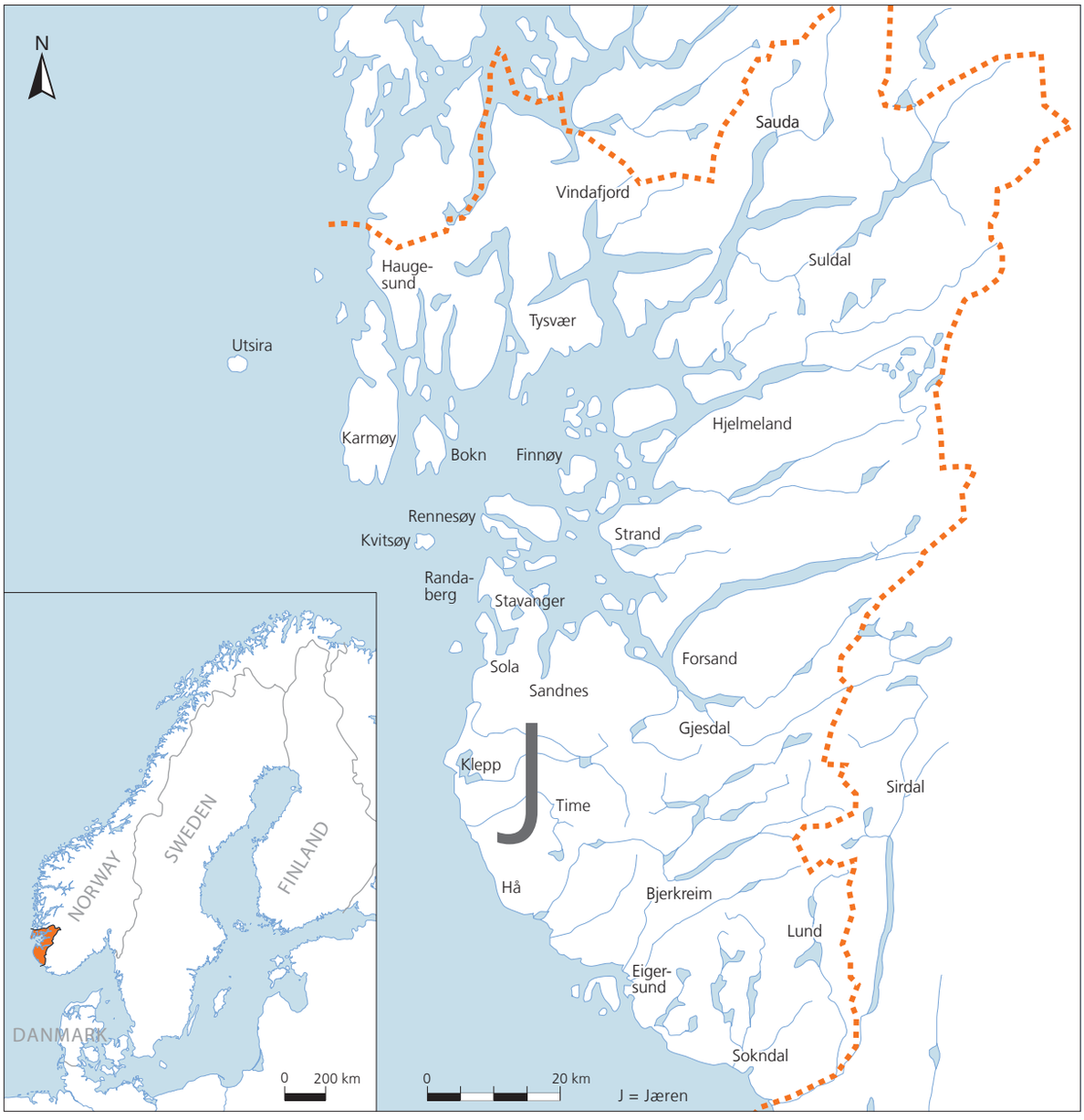


Fig. 1. Rogaland county in southwestern Norway, with its municipality names (up until 31.12.2019). J = coastal territory of Jæren (map J. Schüller, Landesmuseen Schleswig-Holstein, after a draft by I. Særheim).



Fig. 2. Lake Berse *(Bjerkreim). The northeastern side of the lake (on the right hand) is called* Bjørnsstronda *("bear lake side"). The name* Berse *is probably an old s-derivation of the stem in the word* bjørn *"bear", Proto-Nordic* *bernuR *(photo I. Særheim).*



Fig. 3. Bidne farm *(Voss, Hordaland). The farm name* Bidne *is an old* vin*-name (Old Norse* *vin *"meadow"), Old Norse* *Birnin. *The first part represents the stem* *bern- *"bear", found in the appellative* bjørn *"bear", Proto-Nordic* *bernuR *(photo A. Rødstøl).*



Fig. 4. Bjørnestad *farm in Sirdal. The first element of this farm name has been interpreted as the male name* Bjørn, *i.e. "Bjørn's farm". It seems more likely, however, that this name contains the appellative* bjørn *"bear", referring to an area where bears were numerous. Among microtoponyms coined from this farm are* Bjørndalen *("bear valley") and* Bjørnetørnan *("bear mountain shelves"; pronounced* Bjødnetødnan*). There are 47* Bjørn(e)stad*-names in Norway (photo I. Særheim).*



Fig. 5. Bjørnbåsjuvet *is a ravine in Mjåland, Gjesdal. This name refers to a so-called* bjørnbås*, an old hunting method (trap) for bears. The bears were chased into an enclosure and killed (photo P. S. Særheim).*



Fig. 6. Bjørnbåsjuvet *(Mjåland, Gjesdal) is a big mountain cleft (ravine) with a pile of rocks below. The name refers to a* bjørnbås, *a trap for bears (photo I. Særheim).*



Fig. 7. Bjørnbåsen *mountain pass (Osaland, Sandnes). The name refers to a* bjørnbås*, an old hunting method for bears. The bears were chased into an enclosure and killed (photo I. Særheim).*



Fig. 8. The Godfarfjellet *Mountains (the middle of the picture, to the right) and* Bjørnkula *(to the left) on Lake Homsevatnet (Hå and Bjerkreim). Both names most likely refer to bears,* Bjørnkula *with the semantics "bear mountain top", and* Godfarfjellet *probably containing a noa word for "bear",* godfar *("grandfather" < "good father"; photo I. Særheim).*



Fig. 9. Lakes Godfarlonene *(*lon *f. "narrow pool, river extension") and* Godfartjørnene *(*tjørn *f. "small lake") from Ådneram (Sirdal). In this area, one also finds* Godfardalen *valley and* Godfarskardet *mountain pass. These names probably contain a noa word for "bear",* godfar *("grandfather" < "good father"; photo I. Særheim).*



Fig. 10. Gamlefarknuden *Mountain (Suleskard, Sirdal). The first element of this toponym,* gamlefar *("old father (man), grandfather"), is probably a noa word for "bear", similar to* godfar *("grandfather" < "good father"; photo E. Smedvig).*

Germanic "bear" and Germanic personal names before *c.* AD 1000 with elements referring to "bear"

By Robert Nedoma

Keywords: Bear, Germanic, word taboo, personal names, theriophoric anthroponyms

Abstract: This paper presents a brief survey of "bear" words in old Germanic languages. The inherited word, for example continued in Gk. ἄρκτος árktos, *was replaced by a noa-name "the brown one". The main reason for this word taboo is, according to animistic conceptions, to prevent the dangerous animal being summoned when its real name is uttered by humans. Many old Germanic anthroponyms refer, if motivated in morphosemantic respects, to the sphere of reign, power, strength and warfare. "Bear" is a frequent name element that is attested as early as the 4th century AD. Of particular interest are bitheriophoric formations, e.g. WFranc.* Ber-ulf *"bear" + "wolf", that are supposed to have an operative-additive sense.*

"Bear" in Germanic

The Proto-Indo-European term for the (species of the) animal genus *Ursus* is to be reconstructed *$*h_2\acute{r}_{\circ}t\acute{k}o$*- m.(/f.).[1] Reflexes are preserved in most daughter languages: Hitt. *ḫartakka-*, OI *ṛ́kṣa-* (< *$*\acute{r}_{\circ}t\acute{s}a$*-), Avest. *arša-*, Gk. ἄρκτος *árktos* (involving regular inversion *-kt-* < *$*-t\acute{k}$*-), furthermore – exhibiting phonological peculiarities – Lat. *ursus* (with unexpected *u-* and *-s-* from *$*-k\acute{ƀ}$*- ~ *$*-\acute{k}t$*- < *$*-t\acute{k}$*-), OIr. *art*, Arm. *arǰ* and Alb. *arí*. All these cognates denote "bear" rather than generic "large predator" or "wild animal".[2]

In Germanic, however, the inherited term has been tabooed and replaced by a noa-word, namely PGmc. **beran-* m. "the brown one", which is reflected in OHG *bero*, etc. (see below).[3] This is an *n*-stem nominalisation of the adjective PGmc. **bera-* < PIE *$*b^{h}er\text{-}\acute{o}$*- "brown"[4] which is continued

1 Cf. Wodtko et al. 2008, 343–345 s.v. *$*h_2\acute{r}_{\circ}t\acute{k}o$*- (with discussion and literature). However, there are no further *comparanda* (in the best of cases a verbal root as derivation base) so that we cannot trace the PIE "bear" word back to its creation and establish the original meaning of the formation. – PIE *$*h_2$* was probably realised as a voiceless uvular (or velar) fricative, thus phonetically [χ] (or [x]).

2 This applies most probably to Hittite as well (Puhvel 1999, 201 s.v. *hartak(k)a-*; Kloekhorst 2008, s.v. *ḫartakka-*). The assumption that *ḫartakka-* (phonemic /hart(a)ka-/) denotes "wolf" or any "large predator" is no longer held.

3 Accordingly, the bear in the 12th century MHG beast epic *Reinhart Fuchs* by Heinrich (called *der glîchezære*) is named *Brûn* "Brown" corresponding to *Bruun* in Willem's MDu. version *Van de vos Reynaerde*. – ME *brune*, E *bruin* "bear" is a loan from MDu. *bruun*, *bruin* "brown".

4 This is the majority view. An alternative approach was put forward with some reserve by Seebold (1967, 115) and more confidently by Bammesberger (1990, 176 s.v. **ber-an-*) and Ringe (2017, 128), who connect PGmc. **beran-* with Gk. θήρ *$t^{h}\bar{e}r$* "(wild) animal", Lith. *žvėrìs* "wild animal", OCS *zvěrь* "(wild) animal" etc., < PIE *$\acute{g}^{h}\underline{u}eh_1r$*-, cf. Lat. *fĕrus* "wild,

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 921–932 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134371

as Lith. *bẽras*, Latv. *bę̃rs* "(reddish) brown".[5] A related formation is OHG OE *brūn*, OIcel. *brúnn* "brown, dark-coloured", etc., which can be traced back to PGmc. **brūna-* (< PIE **bʰr-uH-no-*, cf. Gk. φρῦνη, φρῦνος "toad").[6] Two comparable cases of deadjectival formations with individualising *n*-suffix (these are, however, not noa-words) are OHG OS *haso*, OE *hare*, OIcel. *heri* m. "hare" (PGmc. **hasan- ~ *hazan-*), literally "the grey one" (cf. OE *h(e)asu*, OIcel. *hǫss* "grey" < PGmc. **has-wa-*)[7], and OHG *rōto* m. "red fish (char?)", literally "the red one" (cf. OHG *rōt* "red", etc.); both are derivatives from an adjective denoting colour. There is another animal name derived from PIE **bʰer-ó-* "brown", i.e. OHG *bibar*, *bibur*, OS *bibar*, *beber*, OE *beb(e)r*, *be(o)fer*, *be(o)for*, etc. m. "beaver" < PGmc. **bebru-*, which reflects reduplicated PIE **bʰe-bʰr-ú-* (> OI *babhrú-* "[reddish] brown; chestnut, sorrel", Lith. *bebrùs*, *bẽbrus* "beaver", etc.).[8]

A different taboo prevailed in the Slavic languages. The word for "bear" is OCS *medvědь*, Russ. медведь *medved'*, Cz. *medvěd* (and *nedvěd*), Sloven. *medved*, etc., which literally means "honey-eater".[9] The name of the legendary hero in the eponymous OE epos *Bēowulf* is a comparable metaphor, if it is interpreted as "bee-wolf", which is the standard view.[10] In the Baltic languages, which are related to the Slavic, the inherited word has also been supplanted, namely by OPruss. *clokis*, Lith. *lokỹs* and Latv. *lâcis*. However, these formations are etymologically unclear; presumably we are dealing with dysphemistic "lacerater, mauler".[11]

Word taboo seeks to avoid anxiety or adversity that might arise when addressing somebody or something by its real name.[12] Thus speakers censor their language due to social necessities by replacing lexical items or phrases which they consider

- too sacred (E *[may] God be with you* → *goodbye*, F *par dieu* "by God" → *parbleu* "but of course!");
- too offensive, particularly relating to sexuality and excretion, nowadays also due to political correctness (OIcel. *lag* "laying, companionship" → "sexual intercourse", E *to go to the toilet* → *to powder one's nose*,[13] E *red Indian* → AmE *Amerindian*, CanE *First Nations*);
- too fearful (G *sterben* "to die" → *den Löffel abgeben*, literally "to give up the spoon");
- too dangerous, either tabooing terms for mighty persons, creatures and supernatural beings (Icel. *djöfull* "devil" → *kölski*, literally "mocker, vituperator", PIE **h₂ŕ̥tḱo-* "bear" → PGmc. **beran-*

savage". This provides a decent etymology, but only if one accepts Seebold's sound change PIE **g/ǵʰ-* (and **g/ǵʰu̯-*) > PGmc. **b-* before vowels except *u*, a proposition which remains quite controversial. Kroonen (2013, 60 s.v. **beran-*) leaves etymological matters unresolved.

5 As for the Baltic words, there is no need to postulate PIE **bʰerH-o-* with a root-final laryngeal (as per Derksen 2015, s.v. *bėras*) which would yield PGmc. **berr-a-* after loss of the laryngeal with compensatory lengthening of the preceding resonant (Lühr 1976, 73–75; Müller 2007, 88). PBalt. **bḗro-* can be explained easily as a so-called vṛddhi-derivative (characterised by lengthened vowel and, mostly, also by shifted accent); see Lühr 2000, 194.

6 Lloyd et al. 1998, 374–377 s.v. *brûn*, *prûn*.

7 The PGmc. *n*-stem "hare" (**hásō* nom. sg., **haznéz* → **hazenez* gen. sg., etc.) compares to OI *śaśá-* "hare", Av. *saŋha-* "id.", etc. (PIE **ḱas-ó-*); cf. Schaffner 2001, 545–546; Wodtko et al. 2008, 410–411 s.v. **ḱas-*.

8 Mayrhofer 1996, 210 s.v. *babhrú-*; Kümmel 2004, 106–116. – PIE **bʰe-* is the reduplicated element, **-bʰr-* the zero grade of **bʰer-*.

9 Vasmer 1955, 110 s.v. медве́дь; Klotz 2017, 152 s.v. **medwē̆di*. For more details on Slavic "bear" words see Udolph, this volume.

10 See recently e.g. Eitelmann 2010, 180–181; Haubrichs 2017, 246. *Bēowulf* seems to be a byname (nickname) since such a metaphoric name is unique in Germanic heroic poetry and it does not alliterate with his father's name, *Ecgþēow*.

11 Smoczyński 1999 (compares Lat. *lacer* "mangled, lacerated", etc.). For different views see Fraenkel 1962, 384–385 s.v. *lokỹs* and Derksen 2015, s.v. *lokys* (with references).

12 Standard works on word taboo are Meillet 1906 ("bear": 7–12), Sahlgren 1918 ("bear": 4–5), Havers 1946 ("bear": 34–37) and Emeneau 1948 ("bear": 56–63); see furthermore Panagl 1984 ("bear": 148–149, 154), Schröder 2001 (research report: 231–238), Allan/Burridge 2006 (political correctness: 90–111) and Hoberg 2019 (sexuality and political correctness), to name just a few. – On the concept of taboo in general, see Sundqvist 2005, 4–5.

13 Another example: Having read a German-language manuscript of mine, a helpful colleague objected to the hyphenation of *des Urin-‖dogermanischen* ("of Proto-Indo-European"), for *Urin-* can be mistaken as "urine" in speed reading. Thus we decided to refrain from word division entirely (see Nedoma 1995, 65 line 2 from below).

"the brown one", as explained above) or even distorting one's own name (Pre-OS/Pre-OHG **Būriso* → **buirso**)[14].

Tabooed words can undergo deformation (E *hell* → mispronunced *heck*) or replacement (by means of euphemistic or dysphemistic noa-names as for "bear", see examples above). Terms for wild and dangerous animals like bears seem predestined for tabooistic substitution. The main reason was obviously fear that the beast which in an animistic view is able to understand human speech might be summoned and attack should its real name be uttered. *Wenn man den Wolf nennt, kommt er g'rennt* ("speak of the wolf, and it will come") is a southern German and Austrian proverb that reflects this idea. Another motive for using a noa-name is that hunters did not want to warn their prey which might then escape. Finally, religious motives may also have been an issue when the bear was regarded as sacred by prehistoric worshippers, and its real name was tabooed out of reverence.[15]

To return to linguistics: the early Proto-Germanic *n*-stem noun "bear" inflected as follows:

sg.	nom.	**berõ*	pl.	nom.	**beranez*
	gen.	**bernez* → **berenez*		gen.	**bernõ*^{n} → **beranõ*^{n}
	dat.	**bereni* (loc.)		dat.	**berunm*^{a}*/¡z* → **berum*^{a}*/¡z*
	acc.	**beranu*^{n}		acc.	**bernunz*

OHG *bero* masc. (G *Bär*), MLG *bēr(e)*, *bāre*, MDu. *bēre* (Du. *beer*), OE *bera* (E *bear*), WFris. *bear*, NFris. *båår*, OIcel. *ber-* (first element in poetic compounds)[16] reflect the regular *n*-stem paradigm. In addition, there are the *Motionsfeminina* OHG *birin*, OE *byren* (**ber-injō-*), OIcel. *bera* (**ber-ōn-*) and OIcel. OSwed. *birna* (**ber-ijōn-*) "she-bear", respectively, as well as hypocoristic OIcel. *bersi* masc. (**ber-s-an-*) "(male) bear" with its by-form *bessi*.[17] Two case forms of the old paradigm, namely the dative pl. in **-um*^{a}*/¡z* and the accusative pl. in **-unz*, were formally identical with the corresponding *u*-stem endings. These pivots triggered a declension shift in North Germanic where the "bear" word was then inflected as an *u*-stem **bernu-* m., continued in OIcel. *bjǫrn* (gen. *bjarnar*), OSwed. *biorn*, *biørn*, etc.[18] There is debate as to whether OE *beorn* m. "warrior, hero, noble, prince", which is attested only in poetry, corresponds to OIcel. *bjǫrn* or to Lith. *bérnas* "boy, lad, farm servant", Latv. *bę̀rns* "child" (< PIE **b*^{h}*er-no-*).[19] In Gothic (and in the other East Germanic languages), "bear" is not attested.

There is a particular expression for "bear cub" in Old West Norse, *húnn* m. (figuratively also "boy"), that has no counterpart in any Old Germanic language. Moreover, Old Icelandic provides

14 By the use of anagrammatic **buirso**, the carver of the runic inscription on the Beuchte fibula (*c.* AD 560–585; SG-12) shelters from the buried female who is thought to be a revenant; see Nedoma 1998, 44–45. The idea of gaining control over somebody through knowing his name – "I called you by name, you are mine", as said in the Old Testament (*Isaiah* c. 43,1) – is old and widespread.

15 On the tabooing of "bear" for reasons relating to anxiety, hunting or religion, see the literature cited above (note 12). – On bear cults among North Eurasian pagan cultures, see e.g. Wamers 2009, 14–15 (with further references).

16 *Vǫlundarkviða* 10,1 (*Sat á berfialli* "[He] sat on a bear-skin") and *Atlakviða* 38,7 (*brœðr sína berharða* "[she never wept for] her brothers, bold like a bear"): *Edda*, 118, 246. Both lays have their origin in old German and/or English traditions; maybe these two *ber*-compounds are West Germanic poetic relics. – OIcel. *berserkr* m., denoting a frenzied warrior, is ambiguous: "bear-shirt (someone who wears a bear skin [in fight])", which is the majority view, or "bare-shirt (someone who wears a mere shirt, has no armour [in fight])"; cf. recently Samson 2020, 48–71 and also Sundqvist, this volume.

17 In modern Icelandic, *bangsi* (derived from *banga* "to beat, forge") is a common term of endearment for "bear", especially for "teddy bear".

18 This was already recognised by Van Helten 1905, 225; see also Lühr 1988, 200, 211.

19 Cf. Lloyd/Springer 1988, 564 (with references). The metaphorical shift "bear" → "warrior, prince" on the one hand would have a parallel in OE *eofor* "boar" → OIcel. *jǫfurr* "warrior, prince", and "boy" → "warrior" on the other hand in OE *hyse* m. "young man" → "warrior". – Lith. *bérnas* "boy, lad, farm servant" and Latv. *bę̀rns* "child" (*"the carried one, burden") are derived from the root PIE **b*^{h}*er-* "to carry, bear"; cf. Derksen 2015, s.v. *bernas*; cf. Wodtko et al. 2008, 18.

lists of poetic "bear" synonyms which are to be found in *Snorra Edda*, namely in the *Skáldskaparmál* section and in the versified *Þulur*.[20] Leaving aside *bjǫrn*, *bersi*, *bera* and *húnn* mentioned above, the circumlocutions attested in *Snorra Edda* are either *hapax legomena* or restricted to skaldic poetry. It is not possible to determine whether they were used in everyday language, as were *Gullfot*, *Storgubben*, *Fulingen*, *Myrtaßen, Storfar*[21] in mid-18th-century Sweden.

"Bear" in Germanic personal names before *c.* AD 1000

Many of the stems that appear in Old Germanic[22] dithematic anthroponyms and (originally) derivated short forms belong to the spheres of reign, power, strength and warfare. Frequently used name elements refer to PGmc. **rīk-* m. "ruler", **aþala-* n./m.? "kin, noble descent", **þrūþijō-* f. "power, strength", **māra-* adj. "famous, glorious", **balþa- ~ *balda-* adj. "bold, brave", **gunþijō-* f. "fight, battle", **heldijō-* f. "id.", **harja-* n. "army", **gaiza-* m. "spear" and **segaz/-ez-* n. "victory".[23] In addition, there is a group of name elements relating to strong and violent animals (see Müller 1970) that are also associated with heroic-martial concepts. An anonymous commentary on the Gospel of Matthew, *Opus imperfectum in Matthaeum*, which dates to the 5th or 6th century, mentions Germanic theriophoric anthroponyms and their martial background:[24]

> *Sicut solent et barbarae gentes nomina filiis imponere ad devastationem respicientia bestiarum ferarum vel rapacium volucrum, gloriosum putantes filios tales habere, ad bellum idoneos et insanientes in sanguinem.*
>
> And so the barbarian tribes [of the Danube area, thus presumably Germanic peoples] also use to give names to their sons according to the devastations of wild beasts or of rapacious birds, thinking it glorious that their sons have such names, suitable for war and raving in blood.

The most common name elements of this kind refer to PGmc. **wulfa-* m. "wolf", **ebura-* m. "boar", **aran- ~ *arna- ~ *arnu-* m. "eagle",[25] and **beran- ~ *bernu-* m. "bear" as well. Of these, **wulfa-* is the most frequent. It seems that particular fighting strength and violence was ascribed to the wolf, as

20 *Snorra Edda*, *Skáldskaparmál*, cap. 64 [51], 72 [58] (ed. Finnur Jónsson [diplomatic], 157, 169 = ed. A. Faulkes [normalised], 75, 88) and *Þulur* IV cc (st. 510–511: *bjarnar heiti*; ed. Finnur Jónsson, 211 = ed. A. Faulkes, 132). – Curiously, *hlébarðr* "leopard" is also included in the third (poetical) list! More than a few circumlocutions in these poets' mnemonics are etymologically ambiguous or unclear, for example, *bolmr* (var. *blómr*) could be "sleeper, snorer", "fierce one" or "thick one"; cf. Magnússon 1989, 70 s.v. *bolm(u)r*. See also Lombardi; Ney, this volume.

21 Wallner 1746, 3 note [b]. *Myrtassen* (ſ *ß* taken as *ss*) is difficult to explain ("the ant-paw", "the marsh-paw"?); the remaining items mean "gold-foot", "the big old man", "the ugly guy, rascal" and "grandfather". Well-motivated noa-names of this kind are also attested in many non-Indo-European languages; cf. for example, Peuckert 1927, 881–182; Knüppel 2017, 606–608.

22 According to LaN (I, ix–x), the term *Old Germanic* refers only to the period up to *c.* AD 600. Note that I deal in this article with names attested until AD 1000 or somewhat later.

23 Cf. LaN II, 595–601, 469, 633, 571–576, 476, 527–530, 542–545, 535–539, 513–514, 609–610. Early examples include: (1) Boian (ethnically Celtic!) *Aino-rix* 1st c. BC (Bratislava): LaN I, 17; (2) Ostrogoth. *Athala-ricus* 6th c.: LaN I, 81–83; (3) Pre-OHG (Franc.) *Þ*ruþ-hild* f., 6th c. (Friedberg): SG-35; (4) WGmc. (Cherusc.) *Segi-merus* 1st c. BC/AD: LaN I, 595; (5) and (6) WFranc. *Gunde-baldo* dat., 5th c.: LaN I, 395; (7) *Þ*ruþ-hild*: see example (3); (8) PGmc. *Hari-gasti* 3rd/2nd c. BC (Ženjak-Negau): Nedoma 1995, 51–56, 70–72; (9) Goth. *Rada-gaisus* 3rd/4th c.: LaN I, 546–547; (10) *Segi-merus*: see example (4).

24 *Opus imperfectum*, 626 (homily 1, ad Manasseh); cf. Haubrichs 2017, 244–245.

25 Early examples: 1. Visigoth. Οὐλφίλας, *Ulfila(s)* 4th c.: LaN I, 795; 2. Visigoth. *Evervulfus* 5th c.: LaN I, 264; 3. WGmc. (Quad.) *Araharius* 4th c.: LaN I, 56. – On Old Germanic "eagle" names, see recently Nedoma 2018, 1590–1591.

confirmed by circumlocutions like OE *hilde-wulf* "fight-wolf: warrior"[26]. Interestingly, theophoric formations do not belong to the oldest layer of Germanic anthroponyms; they emerge only since the 4th century, following a general onomastic trend of late antiquity (cf. Lat. *Ursus* "bear", *Lupus* "wolf", *Leo* "lion", *Aper* "boar", *Aquila* "eagle" and derivatives).[27]

In dithematic personal names, "bear" occurs far more frequently (and in the Old Germanic period exclusively) in first components. According to the appellative *relata*, there is a well-stocked onomastic nest:[28]

- **Bera-* (the compound version of **beran-*): Ostrogoth. *Bere-mud*, *-mund* 5th c., Vandal. *Beremuda* f., 6th c., WFranc. *Bere-trudis* f., 6th c., OHG *Bere-heri* 9th c., Langob. *Per-prand* 8th c., OS (isolated) *Ber-mer* 9th c., Hisp.-Goth. *Ber-ildi* f., 9th c.; furthermore PN **bera** = *Ber-ā* 5th c. (= OHG *Bero*, etc., see below);[29]
- **Bernu-*: OHG *Bern-hild* f., 8th c., Langob. *Bern-ardus* 10th c., WFranc. *Berne-hildis* 9th c., OS *Bern-heri* 8th c., OE *Beorn-redus* 8th c., OWN *Bjǫrn-ulfr* 8th c. and *Bjarn-grímr* 11th c., OSwed. **biarnulfr** = *Bjarn-ulfr* 11th c.;[30]
- *Berin-* (based on gen. sg. **berenez* > **beriniz* ≥ OHG *berin*[31] or exhibiting anaptyxis of *i*) and, less frequent, *Beran-* (with anaptyxis of *a*):[32] OHG *Berin-ger* 9th c., *Peran-ger* 9th c., Langob. *Berengarius* 9th c., WFranc. *Berin-gildis*, *Beran-suuind* f., 9th c.;[33]

26 Cf. *Genesis*, v. 2050–2051 (p. 62): *Hildewulfas herewīcum nēh / gefaren hæfdon* "The fight-wolves (warriors) had travelled near the army camps". Does the metaphor *hildewulfas* – either the Elamites or Abraham's troops are meant here – allude to the battle-hardened Vikings that invaded England from the late 8th century?

27 Kajanto 1965, 329–330 (*Ursus*, *-a*, and derivatives), 327–328 (*Lupus*, *-a* etc.), 327 (*Leo*, *Lea* etc.), 325 (*Aper*, *Apra* etc.), 330 (*Aquila* etc.); OPEL IV, 186–188 (*Ursus*, *-a* etc.), III, 38–39 (*Lupus* etc.), III, 22–23, 21 (*Leo*, *Lea* etc.), ²I, 63, 68–69 (*Aper*, *Apra*, etc.), ²I, 70 (*Aquila*, etc.); cf. Jochum-Godglück 2011, 455–467; Haubrichs 2017, 231, 252–253. – *Ursus*, *-a*, and derivatives seem to be the most popular Latin theriophoric cognomina (Kajanto 1965, 88).

28 Apart from a few remarkable formations, I exclude here monothematic formations such as OHG *Bero*, OWN *Bjǫrn*, OHG *Pirin* f. (created by zero-derivation, i.e. conversion; see below), OS *Bern-o* (created by derivation) and WFranc. *Ber-il-a* f., OWN *Bjar-k-i* (created by derivation and diminution).

29 Ostrogoth. *Beremud*, *-mund*: LaN I, 134; Vandal. *Beremuda* (Carthage): Ennabli 1975, 215 no. 82; WFranc. *Beretrudis*: LaN I, 134; OHG *Bereheri*: Förstemann 1900, 262; Langob. *Perprand*: Bruckner 1895, 233 (relating Langob. *Ber(e)-*, *Bern(e)-*, *Beren-* incorrectly to PGmc. **bera-* "to carry"); OS *Bermer*: Schlaug 1962, 58 (listed as "Bernmâr" by mistake); Hisp.-Goth. *Berildi*: Piel/Kremer 1976, 100; PN *Berā* (Kragehul): RäF 28. – Goth. *Berig* (var. *Berich*, Jordanes; LaN I, 135), the name of a legendary king who led the Goths from Scandinavia to the southern Baltic Sea coast, is morphologically opaque (if indeed Germanic: **Ber-ig-a-*?, **Ber-ik-an-*?). The person may be a fictitious one, for whom Jordanes uses the Germanic-looking name of the Hunnish noble Βέριχος *Bérichos* 5th c. (Priskos; LaN I, 135). – PN *Berā* has only a few and mostly late analogues: ON (?) *Biari* 8th c. (Saxo, *Gesta Danorum* VIII,2,6), ONorw. *Biere* 15th c. (Lind 1905–1915, 135) and OSwed. *Biæri* 15th c. (Lundgren et al. 1892–1934, 27); **biari** on the Rök stone (*c.* AD 800; SR-Ög 136) is dubious because of the numerous readings possible; cf. Reichert 1998, 90–92; Holmberg et al. 2020, 29.

30 OHG *Pernhart*: Förstemann 1900, 270; Langob. *Bernardus*: Bruckner 1895, 233; WFranc. *Bernehildis*: Morlet 1968, 53; OS *Bernheri*: Schlaug 1962, 58; OE *Beornredus*: Searle 1897, 102; OWN *Bjǫrnulfr*: Lind 1905–1915, 147–148; OIcel. *Bjarngrímr*: ibid., 135; OSwed. *Bjarnulfr* (Svista): SR-U 1103. – There is also Latinised *Bern-* in early England, e.g. *Bern-uuini* 7th c. (Bede, Hist. eccl.): Ström 1939, 9, 161. – OWN *Bjarn-* did not undergo *u*-umlaut either owing to early loss of the compound vowel *u* or was influenced by gen. *bjarnar* etc. (cf. Widmark 1991, 44, 51, 175; Peterson 2007, 42); *Bjarn-* was the derivation base for the popular short-form *Bjarni* (Lind 1905–1915, 136–137) = OSwed. *Biærne* (Lundgren et al. 1892–1934, 27). – The runic sequence **ᛒirnaʀ** gen. sg. on the Rök stone (SR-Ög 136; formerly read **airnaʀ**) may be explained either as a WGmc.-NGmc. hybrid anthroponym *Bern-aʀ* or as misspelled ON (Swed.) *Bjarnaʀ* with regular *a*-breaking *e* > *ja*.

31 The root vowel *e* should have been raised due to *i*-umlaut (PGmc. **berenez* gen. sg. > **beriniz* > late PGmc. *†biriniz*), though *e* was restored by intraparadigmatic levelling.

32 Cf. Müller 1970, 13–14. Nonetheless Schramm (1957, 151 sub 7.; 2013, 138 sub 7.), Kaufmann (1965, 90; 1968, 57) and Geuenich (1976, 141, 167) presume secondary vowel insertion ("Vokaleinschub") in general. However, anaptyctic vowels between *r* and *n* are very rare in OHG appellatives (Braune/Heidermanns 2018, 103 § 70 note 1). – Kaufmann's (supplementary?) assumption that *Berin-*, *Beran-* would exhibit a "Nebensilben-Ablaut" (Kaufmann 1968, 58) is misleading.

33 OHG *Beringer*, *Peranger* (e.g. St. Gallen a. 819 *bis*): cf. Förstemann 1900, 267–268; Langob. *Berengarius*: Bruckner 1895, 233; WFranc. *Beringildis*, *Beransuuind*: Morlet 1968, 53, 54.

- *-*bera*- (rare): OHG *Isin-per* 8th c., WFranc. *Lan-berus* 9th c.;[34]
- *-*beran*- (in exception to the old principle of avoiding *n*-stems as second elements): OHG *Sigi-pero* 8th c., Langob. *Siue-bero* 10th c., OS *Athel-bero* 10th c.;[35]
- *-*bernu*-: OHG *Egil-bern* 9th c., Langob. *Geri-bernus* 9th c., WFranc. *Hilde-bernus* 9th c., OE *Wig-beorn* 9th c., OWN *Arin-bjǫrn* 9th c.;[36]
- *-*berinjō*- f.: OHG *Hrod-pirin* 8th c., OS *Athal-birin* 9th c.;[37]
- *-*berōn*- f. (only West Norse): OWN *Hall-bera* 9th c.[38]

There is a clear preference for the first component **Bera*- in East Germanic dithematic names, and for *n*-formations (**Bernu*-) in Scandinavia, England and Saxony. In southern West Germanic (Old High German, West Franconian and Langobardic) anthroponyms, however, both variants are well represented, as well as *Berin*-, *Beran*- (for details, see Müller 1970, 10–18). It seems that these onomastic variants were to some extent interchangeable; for example, *Athelbero* (transposed PGmc. **Aþala-berõ*), palsgrave of Saxony († 982), was also known by *Bern* (**Bernuz*) and *Berno* (**Bernõ*).[39]

As to monothematic formations, there are a number of personal names which are formally identical with the corresponding appellatives, e.g. OHG *Bero* 8th c., Langob. *Pero* 5th c. (?), WFranc. *Bero* 9th c., Visigoth. *Bera* 7th c., OE *Beorn* 8th c., and ON *Bjǫrn* 9th c., as well as OHG *Pirin* f., 8/9th c., OWN *Birna* 10th c. and OWN *Bersi* 10th c.[40] In most cases this was the result of conversion (also called zero-derivation). This is a process of word formation in which the morphology of a pre-existing item remains unaltered whereas word-class and referential semantics are changed, for example, appellative BEAR "bear" → proper noun BEAR denoting "person" and just connoting "being (like) a bear". Yet some of the aforementioned anthroponyms could equally emerge as original short-forms by truncating one component of a dithematic name without suffixation;[41] cf. OE *Leof-heah* "dear, beloved" + "tall, high-class, illustrious" → *Leof{}* (Latinised *Leofus*; curly brackets *{}* indicate deletion) 9th century.[42]

In many dithematic anthroponyms, "bear"-components are connected with name elements relating to strength and warfare. Examples already mentioned include WFranc. *Bere-trudis* f. (PGmc. **þrūþijō*- "strength, power"), OE *Beorn-heard* (**hardu*- "hard, severe, bold"), WFranc. *Hilde-bernus* (**heldijō*- "fight, battle"), OE *Wig-beorn* (**wīga*- "id."), OHG *Bere-heri* (**harja*- "army"), OHG *Berin-ger* (**gaiza*- "spear") and OHG *Sigi-pero* (**segaz/-ez*- "victory"). Bears are strong and powerful animals, and it seems that many compound names of this kind are morphologically and semantically

34 OHG *Isinper* (*Breves notitiae*): Förstemann 1900, 974; WFranc. *Lanberus* (Reims): Morlet 1968, 156 ("*Landberus*" by mistake).

35 OHG *Athalbero*: Förstemann 1900, 1320; Langob. *Siuebero*: Bruckner 1895, 305; OS *Athelbero*: Schlaug 1962, 48.

36 OHG *Egilbern*: Förstemann 1900, 29; Langob. *Geribernus*: Bruckner 1895, 256; WFranc. *Hildebernus*: Morlet 1968, 129; OE *Wigbeorn*: Searle 1897, 487; OWN *Arinbjǫrn*: Lind 1905–1915, 31–32.

37 OHG *Hrodpirin*: Förstemann 1900, 892; OS *Athalbirin*: Schlaug 1962, 48.

38 OWN *Hallbera*: Lind 1905–1915, 455–456.

39 Schlaug 1962, 48. – There are more instances of variability, e.g. OHG *Bernhart* = *Perenhart* 9th c. (Fulda): Geuenich 1976, 167. Dithematic **Bernu*- + **harda*- "hard, severe, bold" became very popular in medieval Europe even before the lifetime of the famous Cistercian monk and abbot of Clairvaux; cf. OHG *Ber(e/a)nhart* 9th c. (Förstemann 1900, 269: "unendlich häufig" ["endlessly common"]), Langob. *Ber(e)nardu(s)* 9th c. (Bruckner 1895, 233), WFranc. *Bern(eh)ardus* 9th c. (Morlet 1968, 53), OS *Bernhardus* 8th c. (Schlaug 1962, 57–58), OE *Beornheard* 8th c. (Searle 1897, 100). OWN *Bjarnharðr*, as far as I have been able to determine, is not attested until later times (Lind 1905–1915, 135).

40 OHG *Bero* (e.g. St. Gallen a. 752): cf. Förstemann 1900, 260 ("sehr häufig" ["very common"]), Langob. *Pero* (only attested in Hist. Langob. cod. Goth., written 9th c.): Bruckner 1895, 233; WFranc. *Bero*: Morlet 1968, 53; Visigoth. *Bera*: LaN I, 134; OE *Beorn*: Searle 1897, 98–99; ON *Bjǫrn*: Lind 1905–1915, 143–147; Peterson 2007, 44; OHG *Pirin* f. (e.g. Salzburg): Förstemann 1900, 266; OWN *Birna*: Lind 1905–1915, 142; OWN *Bersi*: ibid., 132–133.

41 See Nedoma 2015, 299, 303; 2018, 1587–1588.

42 Searle 1897, 328, 333. – The vast majority of unisegmental short-forms was however coined by reduction and derivation, cf. Alem.-Langob. *Droct-ulf* → *Droct{}-o* 6th c. (Bruckner 1895, 243).

motivated (G *Primärkombinationen* as per Höfler 1954, 33, *passim*), even if we cannot precisely determine the semantic relationship between the two components. For instance, WFranc. *Hilde-bernus* "fight" + "bear" may refer to ancient animal-warriors, i.e. fighters who identify with (and change mentally into) mighty beasts;[43] but does this express the wish that the bearer of the name be a "bear in fight" or a "fight-hardened bear (i.e. warrior)"? Of course, there is no great difference between these two possibilities. However, it is difficult to explain martial names such as OHG *Berin-ger* "bear" + "spear". In any case, there are secondary dithematic formations (G *Sekundärkombinationen* as per Höfler 1954, 34, *passim*) that are clearly demotivated in morphosemantic respects, e.g. OHG *Berefrid* "bear" + "peace, security" and WFranc. *Ber-lindis* "bear" + "gentle, mild".[44] In some of these anthroponyms, so-called variation names, one component of a parent's (mostly the father's) name is repeated.[45]

Finally, there are bitheriophoric anthroponyms, which are almost entirely restricted to males. Formations such as WFranc. *Ber-ulf* 6th c. or, conversely, OHG *Wolf-bero* 8th c.[46] may emerge as *Primärkombinationen* (apparently copulative compounds "bear and wolf" or "wolf and bear")[47] or *Sekundärkombinationen* (usually variation names).

As to details of theriophoric personal names, there are different views in onomastic research. According to Schramm (1957), the core of Germanic anthroponyms reflect heroic diction, or more precisely, old – indeed even Indo-European – poetic metaphors for "hero, warrior". Theriophoric name elements would be based on the identification of fighting men with mighty beasts.[48] It seems that both suppositions are valid albeit not exclusively.[49] However, Werner (1963) argued that animal symbols on weapons and jewellery (apotropaic "Heilsbilder") and theriophoric name elements refer to animals associated with gods, e.g. eagle – **Wōdanaz* (OIcel. *Óðinn*). Thus (bi)theriophoric personal names could be regarded as quasi-theophoric names.[50] Werner's *ad hoc* suppositions were rightly criticised (Müller 1968, 202–211; Reichert 1992, 561–563; Haubrichs 2017, 245). In a more balanced manner, Müller (1968; 1970) stated that ideas of animal-warriors as well as animal masking and religious concepts were relevant to naming. A theriophoric anthroponym would, if motivated, intend to address the bearer of the name as the animal in order that they become virtually

43 On animal-warriors, see e.g. Speidel 2004 (bear-warriors: 34–40); 2005 (bear-warriors: 580–581); cf. Müller 1970, 178–179, 194–195; Haubrichs 2017, 247; Sundqvist, this volume.

44 OHG *Berefrid*: Förstemann 1900, 261; WFranc. *Berlindis*: Morlet 1968, 52.

45 Two examples: The first element varies in Alem. *Mede-richus* ("reward [?]" + "ruler"), father of *Agena-richus* ("?" + "ruler"), 4th c. (LaN I, 499 and 13); the second element varies in OS *Ail-bertus* ("?" + "bright"), father of *Ail-bern* ("?" + "bear") 10th c. (Schlaug 1962, 75). – For "meaningless" **Agina-* and **Agila-* (> OS *Ail-*) see Nedoma 2004, 149–150. On *Primärkombinationen* (in every case characterised by intended meaning) and *Sekundärkombinationen* (in many cases concerned with marking genealogical relationship), see recently Nedoma 2015, 295–299 (with references).

46 WFranc. *Berulf*: LaN I, 139; OHG *Wolfbero*: Förstemann 1900, 1646. – Note that only "bear" + "wolf" is used frequently and widely: Ostrogoth. *Berevulfus* 6th c. (Voghera; LaN I, 134, cf. LaN II, 21), Hisp.-Goth. *Ber-*, *Uerulfus* 9th c. (Piel/Kremer 1976, 101), OHG *Perolf* 9th c., *Bernulf* 8th c. (Förstemann 1900, 266, 273), OS *Bernulf* 9th c. (Schlaug 1962, 59), OE *Beornwulf* 8th c. (Searle 1897, 103–104), OWN *Bjornólfr* 8th c. (Lind 1905–1915, 147–148). In contrast, "wolf" + "bear" is far less common: OHG *Wolfbero*, *-bern* 9th c. (Förstemann 1900, 1646), OE *Wulfbeorn* 11th c. (Searle 1897, 506).

47 Cf. Scherer 1953, 12 ("Identitätskomposita"); Müller 1970, 167–168; Beck 1986, 312; Haubrichs 2017, 251. Several name formations, e.g. OHG *Suan-olf* 10th c. "swan" + "wolf" (Förstemann 1900, 1378), cannot be explained in this way, nevertheless this is a clear *Sekundärkombination*.

48 Schramm 1957, 77–83 ("Der Mann als Tier"), 106–107; cf. also Schramm 2013, 67–73, 121–123. This view is supported by Andersson 2003, 592–593.

49 See Beck 1965, 96–98; Müller 1970, 192–195. Yet numerous Germanic theriophoric names echo theriophoric formulae for "man, warrior" known from Old English poetry (e.g. *hilde-wulf* "fight-wolf: warrior"; see above, note 26). Furthermore there are no extant correspondences within Old Icelandic skaldic poetry which is full of *kenningar*. Hence it is doubtful that theriophoric warrior metaphors are common Germanic.

50 Werner 1963, 379–383. Earlier, Meyer (1913, 145) assumed that name elements relating to "wolf" and "raven" would refer to **Wōdanaz*, which is likewise arbitrary.

one.[51] In Wagner's opinion (2008) every theriophoric name is morphosemantically motivated. For instance, he reads OHG *Raban-ger* 9th c. as "he who has a spear that provides the raven [as an animal of the battlefield] with feeding" and WFranc. *Wulf-ramnus* 7th c. as "he who has wolf and raven on his side [at the battlefield]".[52] Yet such copulative-possessive compounds have no parallels, as far as I can see. Beck (1986) and Haubrichs (2017) basically followed the ideas put forward by Müller. Theriophoric anthroponyms would provide identification potential, and bitheriophoric formations are believed to be operative-additive: the names such as OHG *Wolf-bero* or Visigoth. *Ever-vulfus* expressed the wish that their bearers might combine or potentiate the qualities of these animals, that is to be strong (powerful, violent) as a wolf and bear (or boar).[53] Chronological, geographical and sociocultural diversity, however, makes it difficult to propose a uniform solution to the characteristics of older Germanic personal names having elements that refer to animals in general and to "bear" in particular (cf. Beck 1986, 315; Andersson 2003, 597).

Abbreviations

Acc. = accusative, adj. = adjective, Alb. = Albanian, Alem. = Alemannic, AmE = American (modern) English, Arm. = Armenian, Avest. = Avestan, BrE = British (modern) English, c. = century/centuries; CanE = Canadian (modern) English, Cherusc. = Cheruscian, Cz. = Czech, dat. = dative, E = (modern) English, F = (modern) French, f. = feminine, Franc. = Franconian, G = (modern High) German, gen. = genitive, Gk. = Greek, Goth. = Gothic, Hisp.-Goth. = Hispano-Gothic, Hitt. = Hittite, Icel. = (modern) Icelandic, Langob. = Langobardic, Lat. = Latin, Latv. = Latvian, Lith. = Lithuanian, loc. = locative, m. = masculine, MDu. = Middle Dutch, ME = Middle English, MHG = Middle High German, MLG = Middle Low German, n. = neuter, NFris. = (modern) North Frisian, NGmc. = North Germanic, nom. = nominative, OCS = Old Church Slavonic, OE = Old English, OHG = Old High German, OI = Old Indic, OIcel. = Old Icelandic, OIr. = Old Irish, ON = Old Norse, ONorw. = Old Norwegian, OPruss. = Old Prussian, OS = Old Saxon, Ostrogoth. = Ostrogothic, OSwed. = Old Swedish, OWN = Old West Norse, PBalt. = Proto-Baltic, PGmc. = Proto-Germanic, PIE = Proto-Indo-European, pl. = plural, PN = Proto-Norse, Quad. = Quadian, Russ. = Russian, sg. = singular, Sloven. = Slovenian, st. = stanza, Swed. = Swedish, v. = verse, Vand. = Vandalic, Visigoth. = Visigothic, WFranc. = West Franconian, WFris. = (modern) West Frisian, WGmc. = West Germanic.

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51 Müller 1968, 214–216; 1970, 178–223 (211: "Die theriophoren Anthroponymica sollten vor allem ihre Träger selbst als Tiere benennen" ["The theriophoric anthroponyms should particularly designate their bearers as animals"]).

52 Wagner 2008, 399–404. – OHG *Rabanger*: Förstemann 1900, 872; WFranc. *Wulframnus*: ibid., 1654.

53 Beck 1986, 306–315; Haubrichs 2017, 239–251 ("Eltern, die dem Sohn einen solchen Namen gaben, wollten die mental erwünschten Eigenschaften der kriegerischen Tiere potenzieren und verschmelzen" ["Parents giving such a name to their son wanted to potentiate and merge the desired qualities of these warlike animals"]), 254. – OHG *Wolfbero*: see above, note 46; Visigoth. *Evervulfus*: see above, note 25. However, Wagner (2008, 402) considers *Evervulfus* to be a circumlocution "prince-killer"; this is questionable for the metaphoric use of PGmc. **ebura-* "boar" as "prince" is restricted exclusively to Old Icelandic poetry (*jǫfurr*).

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The Slavic word for "bear"

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Keywords: Bear, taboo word, Slavic names, place names, field names, personal names, family names

Abstract: The Slavic word for "bear" (Russian medvéd´*, Polish* niedźwiedź*, etc.) means "honey eater" and is a taboo word. In Slavic names, it is well-documented. In the case of hydronyms, place and field names, the frequent appearance of the animal close to rivers and other places motivated the naming. Concerning Slavic family names, it is often about a man supposed to be a "bear" in life and battle. Here, the wish of a human being to be similar to the animal or the belief to be intrinsically linked to the animal is of importance. The bear is also common in personal and family names in other languages and cultures. In the German language alone, the basic word* Bär *"bear" is attested* c. *15,000 times as a family name.*

General remarks

The Indo-European languages had a mutual word for "bear" early on. It is still preserved in Latin *ursus,* Greek *árktos* and Old Indic *ṛ́kṣa-*. Even so, its original meaning cannot be determined.
In the Germanic, Baltic, and Slavic languages, this original word was apparently replaced by a taboo word through several periphrases (EWAhd I, Sp. 565). A taboo word springs from the speaker's dread to use the term for a certain topic, a certain sector, or – as it is in the case of the bear – the actually quite well-known word for an animal, which is then replaced by a different expression. Likewise, names of gods or demons were only to be uttered under certain circumstances. According to W. Havers (1946, 34), A. Meillet (1906) constituted all subsequent works on language taboo in the Indo-European language, since Meillet's classic paper starts with animal names in general and the name for the bear specifically. The Austrian linguist O. Panagl (1984) calls this name taboo the "Rumpelstiltskin-effect". H. Schröder (2001) gives a good overview of studies on language taboo, also of the time after the publication of W. Havers' paper. The belief in name magic even covers wild animals. One tried to avoid the perceived incantation of wild animals by calling them by their name, since people and their herds should not be endangered by them (see also Nedoma, this volume).

The terrifying and strong bear falls into this category. In the Germanic languages, the original word inherited from prehistoric Indo-European times was replaced by a term with the meaning "brown", namely an original adjective **beran-,* to a basis **bher-* "shiny, (light)brown" (Old High German *bero, pero,* Middle High German *ber,* Modern High German *Bär,* an old *-n-*stem); besides, in the Nordic languages a *-u-*stem *björn* "bear" exists, derived from **bernu-*. Here, the bear is actually "the brown one", and, correspondingly, in the Baltic languages, Lithuanian *bĕras* and Latvian *bęrs* "brown". Additionally, the word for "beaver" belongs here, too. The Old Icelandic language knows another word for bear: *bolmr* "the big, fat one", even though this term is only documented twice and

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 933–938 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134372

poetically. According to a Swedish account from the year 1746 by one M. E. Wallner, the bear should not be called by its real name. Instead, he should for example be called "gold foot" (Swedish *Gullfot)* or "the great old man" (Swedish *Storgubben*; cf. Sundqvist 2005, 256).

Meillet (1906) had already pointed out Estonian, Finnish, and Lappish (Sami) substitute names for the bear such as "forest fame", "the old one", "the mighty paw of honey", "the ragged one", "the wide foot", or "termite devourer". Other taboo names for the bear exist among the Astrakhan-Russians, on Kolim, among the Hutsuls and the Caucasians, as Havers (1946, 35, comment 3) states. He also indicates that the bear is worshipped as a God among several peoples and Finno-Ugric peoples in particular, and one should for instance not say: "We killed the bear", but rather: "The holy animal died".

In the Baltic languages, instead of the original term a word group exists as a substitute. It consists of Lithuanian *lokỹs,* Latvian *lâcis* and Old Prussian *clokis*. Its etymology and original form are controversial, though. A connection to the Slavic word for "animal hair, fur" is most likely. As a consequence, this would mean that the original "bear"-word was also replaced in this language family. This is supported by another word in Lithuanian, because Lithuanian *meškà* "bear" was loaned from the Slavic language, which I will deal with hereafter.

In the Slavic languages, the original word was replaced by a connection between *med* "honey" (related to the Germanic word *Met* "mead, honey wine") + **ed-* "eat" (this word, too, has a German equivalent in *essen*); here, the bear is the "honey-eater". Thus, the Old Slavs paraphrased the dangerous animal to not send for it by calling it by its real name.

In the Slavic languages, the word appears as follows: Russian *medvéd',* Ukranian *médvid', védmid',* Church Slavonic *medvěd'*, Bulgarian *medvě'd,* Serbian, Croatian *mèdvjed*, Slovenian *medved*, Czech *medvěd*, *nedvěd*, Polish *niedźwiedź*, dialect *miedźwiedź* (the *n-* in the prefix was created through remote assimilation to *d* and dependence on *ne-* "no, not"), Upper Sorbian *mjedwjédź*, Lower Sorbian *mjadwjeź* (Vasmer 1958, 110–111), with reference to further literature).

Related creations exist in Old Indic (*madhuvád-* "eating sweets") and in the Lithuanian language (*mės-ẽdis* "meat eater"). In Sorbian, the colloquially loaned *bar*, *barica* "bear" from German is now used (Schuster-Šewc 1981–1984, 919–920). The bear's gusto for honey was also the basis for the disguising paraphrase *Beowulf* which is to be understood as "bee wolf" (Müller 1970, 211).

Apart from the widespread "honey eater" word, there is one more term for the bear which is also fostered by taboo – *meška*, *mečka* ("bear") which today is mainly distributed among the southern Slavs. In the past, this term was also known among the east and west Slavs, which is supported by a loan to the Baltic (Lithuanian *meškà* "bear").

The bear in Slavic names

Introduction

It has been known for a long time that there are several geographic and personal names in which the name of the bear lives on. Thus, H. Reichstein (1976, 46) justifiably states: "Die Häufigkeit des Braunbären in älteren Zeiten, seine Beliebtheit als Jagdobjekt und seine Stellung als König der Wälder spiegeln sich in zahlreichen Orts- und Personennamen wider" ("The frequency of the brown bear in older times, its popularity as an object of hunting and its position as the king of the forests is reflected in several place and personal names", author's translation).

This is also true for the large geographical area which the Slavic languages cover today (and, to some extent, areas covered earlier, e.g. in today's eastern Germany, and parts of the southern Balkans). To begin with, the basis of the detailed list of respective names in the following is a profound collection of geographical names. Since 1970, I have been noting down these geographical names – in

those days without a PC, electronic data processing, or internet. Today, they have been electronically recorded. All data – which cover *c.* 450,000 co-entries – are accessible through the website of the Academy of Sciences in Göttingen (https://adw-verwaltung.uni-goettingen.de/ortsnamen/images_lightbox.php), labelled *Nomina Geographica Europaea*. The sources of most of the family and place names, hydronyms, and field names stated below can be found there. Apart from that, I have analysed large collections of place names and hydronyms, such as given in M. Vasmers *Russisches geographisches Namenbuch* (Vasmer 1968–1989), the Polish *Słownik Geograficzny* (Słownik Geograficzny 1880–1902), and others, again. These collections contain hundreds of geographical names which I will not cite in detail here.

The striking occurrence of bears in the respective areas must be the reason for the development of most of the following names. I will not comment further on the formation of names by adding suffixes which is the preferred method among Slavic languages. The collection of names speaks for itself, also in this respect.

Hydronyms

Medveđa in former Jugoslavia; *Medvjednica* in the region around the Sava River (Croatia); *Medved'* in Ukraine; *Medvedevo* in the region around the lower Desna (Ukraine); *Medvedka* in the region around the Seym (western Russia, northeastern Ukraine); *Medwedżiv* in the region around the San (southeastern Poland); *Medveja,* place name and hydronym in the Bukovina (northern Ukraine, southern Romania); *Medvežyj, Medvidka,* hydronyms in Ukraine; *Medvedica* in the region of the former Tver Governorate, *Medvedka,* several times in middle and northern Russia.

Place and field names

When examining the following names, one cannot be certain if one is dealing with a place name (in terms of a settlement name) or a field name (mostly to be understood as names for unsettled areas). Thus, I have not always made a separation.

Medvedce, Medwedicze, Medwedowce, Medwedówka, Medvedza, Medwedzek, Medvedzi, Medweża, place and field names in southeast Poland (partly in former Galicia); *Medvedev,* about 15 place names in the eastern Slavic settlement area; *Medvedija, Medvedivka, Medvedok, Medvedova, Medvedyč, Medvedža,* in Ukraine; *Medved, Medvěd'*, field names in the whole of the Slavic world, such as e.g. in Czechia and in Slovakia (here also as *Medveďová, Medvedzie, Meďveťka, Meďvetka*), or in Bulgaria, also as *Medvědí*, *Medvědice*; the Czech annalist Cosmas (*c.* 1045–1125) already mentions a name for a mountain *Medvěz*; furthermore, *Medvež, Medvjednica,* field names in Croatia; *Medveja, Medviđa, Medviđak, Medvidina, Medvija, Medvijak, Medvije, Medviš,* field and place names at the Adriatic Sea and in Croatia; as *Medvedac, Medvedište* in Serbia, there also as a field name *Medvednjak*; *Medvedjek, Medvednjek, Medvedova,* several field names in the Julian Alps (Slovenia); *Medvednoe*, field name in Belarus; *Medveajde, Medvež´e, Medvjažd* in Bulgaria; *Medvedja, Medvěžda*, Slavic place names in Greece (Vasmer 1958). Names can also be detected in formerly Slavic areas: *Groß* and *Klein Medewege* close to Schwerin, Germany, 1186 *Medewede, 1285 maior Medeuuede*; as Slavic relicts also in Austria (*Medvedina, Medvejak*), and in Hungary, for example as *Medwednyk* near Veröce, and as a field name *Medvigye* in the comitatus Scabolcs.

The allocation of *Medewitz* and *Medewitzsch* near Bischofswerda, near Bautzen, Germany, and in Pomerania (Poland) is not certain, because here, a derivation from the Slavic word for honey, *med*, might also be possible.

As noted above, there has been a change from the initial sound *m-* (*medved*) to *n-* (Czech *nedvěd*, Polish *niedźwiedź*) in the Slavic word for bear. Consequently, especially geographical names with *N-* as initial sound are to be expected in Czechia, Poland, and Slovakia. In the above noted collection of names from central Europe, I found the following including others: *Nedvěd, Nedveka*, hydronyms

in Czechia; *Nesdvědička*, a tributary to the Svratka in the southern Moravian region. Close to it, the town *Nedvědice* is situated; *Nedweis*, German variety of place names near Olomouc, Czechia, Czech *Nedvězí*; *Nedvěk*, field name near Pilsen; *Nedvězí*, several field names in Czechia, and in Slovakia.

Due to Polish settlements even in Ukraine, traces can also be found in that country (*Nedwedyś*, group of houses close to Lviv). The farm name (a specific name given to a farm) *Nedved* in Carinthia, 1348 *Medbeg*, is probably also to be classified here. It is not always determinable for sure if a name is derived directly from the word bear or from the name of a person which in turn contained the word. Thus, it is more likely that the Czech place names *Nedvědič*, 1209 (fabrication, 13th century) *de Medwediz*, 1251 *Medeweditsch* were derived from the respective name of a person *Medvědík*. The transition from *M-* to *N-* in the initial sound is clearly visible here.

Several geographical names are to be found in Poland as well: *Niedźwiad*, several place names near Posen, Gnesen and in southeast Poland; *Niedźwiada*, hydronym in the area around the River Oder, also a place name near Lublin; *Niedźwiadek*, field name near Gdansk and near Posen; *Niedzwiadka*, *Niedźwiadka*, hydronyms and field names in Galicia; *Niedźwiadna*, place name near Suwałki and in Silesia; *Niedźwiady*, *Niedźwiada*, *Niedźwiedź*, several place and field names in Poland; *Niedźwieck*, place name in southern Poland; *Niedźwiednia*, place names in Galicia; *Niedźwiedziak*, place names near Gniezno and near Gdansk; *Niedźwiedza*, several place names in southern Poland; *Niedźwiedzianka*, hydronym near Szczecin; *Niedzwiedzica*, several place and field names in different regions in Poland.

Personal and family names

"Der Mann als Tier" ("Man as an animal", author's translation) – this expression can be found in the works of G. Schramm (1957) as well as those of K. Kunze (2003) and other authors. G. Müller (1970, 178–195) deals with this topic in a subchapter, "The animal warrior".

Animal denotations in personal and family names are common in Indo-European languages; such names are called theriophoric. The most common animal is the *wolf*, besides that also the *lion*. In the Germanic languages, the *bear* is attested in large numbers. According to Müller (1970, 10) "können nach den Wolf-Namen […] die Bär-Namen […] als die bedeutendste Gruppe theriophorer Anthroponymica im Germanischen gelten" ("Next to names relating to the wolf, the most important group of theriophoric anthroponyms in the Germanic languages contains names attributable to the bear", author's translation).

The Old English language proves how narrow the conception of "man as an animal" was in the case of the bear in the Germanic languages, since Old English *beorn* means "warrior". Without any doubt, this word is etymologically identical with Old Nordic *bjǫrn* "bear".

Among the first names, one comes across several animals – eagle, bear, buck, boar, falcon (hawk), deer, dog, crow, marten, raven, horse, swan, bull, ram, wolf, snake, dragon. Many of these animals are strong and aggressive, etc.; thus, such names are probably to be seen in connection with the idea of man as a warrior (Kunze 2003, 25).

The most comprehensive paper about animal denotations was presented by Müller (1970, 179). Here, he produces an extensive list of names that show "wie produktiv jene Komposita waren, die den Mann als 'Wolf' oder 'Bär' des Kampfes und der 'Waffen' bezeichneten" ("[…] how productive these compounds were when they denoted man as 'wolf' or 'bear' of battle and of 'weapons'", author's translation). In detail, he attends to the question why animal denotations were used in personal names. It is mainly "der Wunsch des Menschen, diesem Tier ähnlich zu werden, oder der Glaube, mit ihm wirklich wesenhaft verbunden zu sein" ("the wish of the human being to resemble the animal, or the genuine belief to be intrinsically linked to it"; Müller 1970, 201, author's translation). In addition, there is "die Bewunderung der Kraft des Bären und der Glaube an sein übernatürliches Wesen" ("the admiration of the power of the bear and the belief in its supernatural character"; Müller 1970,

201, author's translation). At the same time, the bear was seen as a fighting animal, just as the wolf, boar, and others, which man wanted to resemble to be able to lead a better life – with the help of his name. Müller (1970, 211) summarises: "Die theriophoren Anthroponymica sollten vor allem ihre Träger selbst als Tiere benennen" ("The bearers of the theriophoric anthroponyms should be identified with the animals themselves", author's translation).

In accordance with these explanations, it is not surprising that the bear plays an important role in Slavic family names, whereas there is no safe evidence for first names. Unfortunately, it is only possible to present more precise details about the family names in some of the western Slavic countries, since the eastern and southern Slavic territories do not provide sufficient material. Even telephone books on CD-ROM or in similar form are rarely found. To begin with, I present the well-investigated countries of Czechia and Poland (since the data basis is also missing in Slovakia).

In Czechia, almost 2,000 surnames can be attested, more specifically: *Nedvěd* – 1,662, *Nedvědický* – 77, and *Nedvídek* – 281. Still, names with *M-* as the initial do also exist. Examples are *Medvec* – 52, *Medvecký* – 38, *Medveď* – 84, *Medvěd* – 48, mainly in Moravia and partly in northern Bohemia. To some extent, dialect words are of importance. In Moravia, the Slovakian language is very close, and here, the transition from *m-* to *n-* in the initial sound is missing, since the bear is called *medveď* in Moravia.

In Poland, even more surnames could be recorded, but this is due to the excellent data basis. The following remarks are based on a profound collection of Polish surnames, which is unique on a global scale. It contains the names of approximately 38.5 million inhabitants and is based on the documents of a state insurance company in Poland, in which almost every citizen of Poland was registered until the time of the German reunification in 1990 (published by K. Rymut, first in book form [1992–1994], after that also on CD-ROM [2003]).

The collection contains thousands of names; not all of them can be listed here. The number of names beginning with *Nedv-* and *Nedwid-*, respectively, is small (*Nedved* – 9, *Nedvidek* – 1, *Nedwed* – 18, *Nedwidek* – 45). Here, German administrators at the time influenced the originally Polish spelling.

With regard to the names with *Niedzw-* and *Niedźw-* as initial sounds, I only mention: *Niedzwiadek* – 14, *Niedzwiecka* – 478, *Niedzwiecki* – 495, *Niedzwiedzka* – 166, *Niedźwiadek* – 842, *Niedźwiecka* – 3,602, *Niedźwiecki* – 3,364, *Niedźwiedzińska* – 159, *Niedźwiedziński* – 159, *Niedźwiedziuk* – 109, *Niedźwiedzka* – 1,350, *Niedźwiedzki* – 1,245, *Niedźwiedź* – 4,046.

Besides, there are also names with *M-* as initial sound, such as – among others – *Medwecka, Medwed, Medwedew*. These are not very common. One will probably come across them in the east of the country, and for the most part, these contain the Eastern Slavic form of the bear-word in which the initial *m-* has not turned into *n-*. These include *Medvid, Medwedczuk, Medwedecki*, and yet others.

Due to the events at the end of World War II, several of the listed Polish and Czech surnames exist in the border region between Germany, Poland and former Czechoslovakia. As a result of flight, forced migration, and relocation, there are Poles, Czechs, and Slovaks of German descent bearing names of Slavic origin.

Some of the names below also come from the Soviet Union and the southern Slavic Balkan states. Due to the fact that the basis for an examination is very good – because of the computerised versions of telephone book-CDs – the following names can be attributed to the Slavic bear-word (in parentheses, the number of names that come from a CD with family names from the year 2002). To begin with, the names with *M-* as initial sound: *Medvecky* (5), *Medved* (98), *Medvedenko* (4), *Medvedev* (46), *Medvedeva* (19), *Medvedik* (4), *Medvedovskyy* (3), *Medvidovic* (17).

With initial *N-*, but probably derived from Czech: *Nedved* (25), *Nedvidek* (13).

The largest group with initial *Niedz-* which is derived from Polish includes several hundred surnames: *Niedzwecki* (16), *Niedzwedzki* (12), *Niedzwetzki* (152), *Niedzwetzky* (3), *Niedzwiadek* (5),

Niedzwicki (10), *Niedzwiecka* (9), *Niedzwiecki* (26), *Niedzwiedz* (78), *Niedzwiedzinski* (6), *Niedzwiedzki* (12), *Niedzwietz* (10), *Niedzwietzki* (3), *Niedzwitz* (8).

This collection makes it clear that the bear has played an important role in the Slavic languages. As a side note: The basic surname *Bär* can be attested 15,000 times in the German language. In this respect, the bear proportions in the Slavic countries are comparable to those in the German language.

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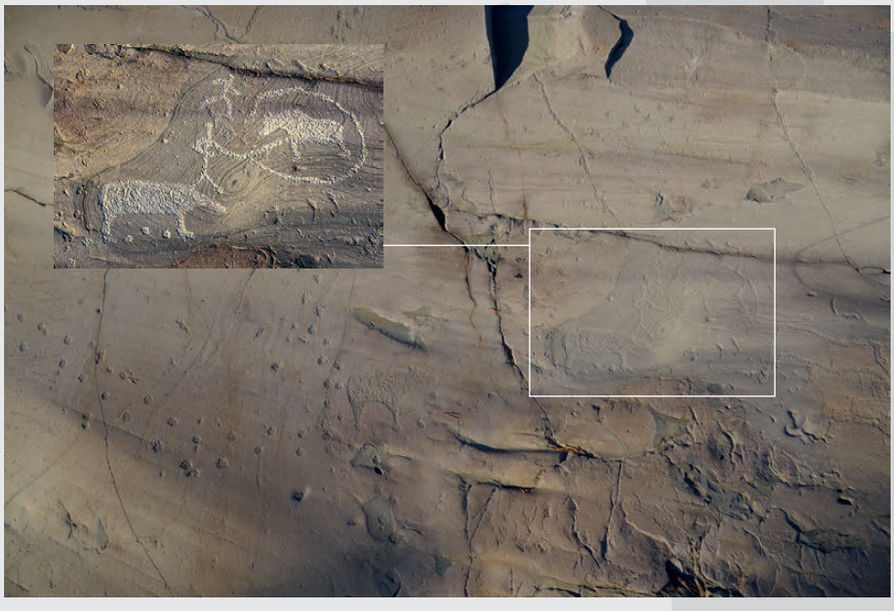
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Bears in image science (northern Europe)



The earliest iconic bear imagery comes from the rock art in Alta, northern Norway, acknowledged as a World Heritage site by UNESCO. There are many bear depictions known from Alta, some of which are woven into narrative cycles, with a dating to the late Mesolithic and the early younger Stone Age. One particular case is the hunter with a spear who waits for the bear to come out of the den. Next to the hunter there is a person without a weapon; who is this person? (see Grimm, Summary, this volume; graphics K. Tansem, World Heritage Rock Art Centre, Alta, Norway).

Stone Age amber bear figurines from the Baltic Sea area

By Daniel Groß and Peter Vang Petersen

Keywords: Amber, figurative art, stray finds, dating problems, animism, Palaeolithic, Neolithic

Abstract: Amber bear figurines are a small group of objects found all around the Baltic Sea. They are usually naturalistically shaped and come in a variety of forms and wealth of detail. A major issue when dealing with this topic is the fact that the figurines are mostly stray finds, so they lack archaeological context. Furthermore, they are not directly datable due to their material. This makes it difficult to contrast them against their archaeo-cultural background. This paper will therefore discuss the dates that have been assigned to these figurines and the reasons why bears were depicted. As it turns out, there are less indications for a Mesolithic date than for an earlier or later phase, based on comparable art and styles. This also aligns well with other naturalistic amber finds from the Palaeolithic and Neolithic, and hence questions the traditional attribution of the amber bear figurines to the Mesolithic. The function of these artefacts, however, remains unclear due to the lack of contextual information.

Introduction

Ever since humans resettled the areas around the modern Baltic Sea in the Late Glacial, bears have been an element of their natural environment. Having already been represented in cave paintings during the Upper Palaeolithic in French caves, such as Grotte Chauvet, and by the headless clay sculpture in the Grotte de Montespan (France), in later times representations of bears, made of amber (and other materials), apparently "became mobile". The phenomenon of amber bear figurines is so far little understood, as they are not regular finds and are very limited in numbers. However, they are not a single and unprecedented phenomenon. Ceramic bear figurines were already manufactured at the Upper Palaeolithic site of Dolní Věstonice (*c.* 29,000–25,000 cal BP; Vandiver et al. 1989).

The bear figurines in the focus of this contribution are exclusively manufactured of amber and thus made of collected raw material. Amber in Europe is mainly distributed in the coastal regions of the southern Baltic where it is often found on the shore, since it has been redeposited from Eocene glauconitic sediments by fluvial and glacial processes.

As amber is a material that, similar to other organic substances, deteriorates rather quickly when exposed, only low numbers of such finds are known from the Stone Age around the Baltic Sea – even when compared with finds made of other organic materials (e.g. bone, antler, and wood). Figuratively bear-shaped amber objects are even scarcer, so only 15 specimens are known – including one modern fake and five ambiguous finds –, six from the territories of modern Denmark, four from Latvia, two from Poland, and one from Norway, Estonia, and Finland, respectively (Fig. 1). The discussed find group is extremely small and thus not very well suited for comparative analysis or general conclusions, but traditionally the figurines are attributed to the Mesolithic (*c.* 11,600–6500

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 943–960 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134373

cal BP). However, most of them provide comparable shapes and patterns and thus can be recognised as at least conceptually related.

Almost all amber bear figurines from the Baltic Sea area are stray finds. Hence, they cannot be reliably dated, due to missing context and the fact that amber is a fossilised organic material. As such, it has an intrinsic age from when it was excreted as tree resin millions of years ago. Consequently, the figurines cannot be allocated by radiocarbon dating either, as this would not date them to the time of their manufacture and use, but to the time when the tree resin was formed. Therefore, the finds can be associated with a certain timespan only based on typological reasons or contextual information. As will be discussed below, a few figurines yield possibilities for contextual dating, but their chronological and archaeo-cultural association usually remains difficult.

Carving animal figurines from amber (and other materials, too) is a manufacturing process that is rooted in older periods. The earliest dated amber figurine from the wider study area is the so-called Weitsche elk, found near Lüchow, Niedersachsen, in Germany (Fig. 2), which is a small representation of an antlerless, probably female elk with a bowed head. It has been dated to the Late Palaeolithic (*c.* 12,800–12,680 cal BP; Veil et al. 2015) and is associated with the Federmesser groups.

Shape and form of amber bear figurines from the Baltic Sea area

The shape and form of the figures is a key element for recognising them as bear representations. The quality and thus the expressiveness of the amber figurines differs between those showing distinct features and clear outlines and sometimes spurious fragments that can only be approximately associated with bears. In this chapter, the different figurines will be briefly presented, including their reported find circumstances. No in-depth descriptions of the finds will be conducted, as these have been published before (see respective literature), and this is beyond the scope of the present article. Moreover, it is intended to compare the different animals from a source-critical perspective and discuss their relevance for interpreting the interaction between human and environment. Therefore, specifics of the specimens are highlighted, if they are considered relevant for the following interpretation and contextualisation.

Fanø, Jutland, Denmark (N 55.402°; E 8.421°)
The unornamented Fanø bear figurine (Fig. 3) was washed up on the shore in 1991 at a spot where an amber pendant had been found some time before. It is 6.5 cm long and its legs are broken off; formerly there might have been a bridge that connected its front and back legs, similar to the elk figurine from Weitsche. The neck of the bear has a polished groove and thus clearly indicates that it was once suspended on a cord or string (Vang Petersen 2013, 223–226).

Resen, Jutland, Denmark (N 56.379°; E 9.087°)
The 7.1 cm long Resen figurine was found in central Jutland during peat cutting in the 19th century and shows different types of ornamentation on its body and head (Fig. 4). These patterns are the only possibility for dating it, and it is consequently attributed to the Middle and Late Mesolithic (*c.* 9500–6000 cal BP). However, Vang Petersen (2018, 149) questions how reliable such a dating is, as similar patterns are also found on older figurines from the Late Palaeolithic, and consequently dates it to the Late Pleistocene (Vang Petersen 2019, 7). Additionally, it has been questioned whether the figurine depicts a bear at all. Andersen (1980) and Toft/Brinch Petersen (2013, 202), for instance, suggest that the find represents a wild boar. However, with respect to all its features, the interpretation as a bear is in our opinion the most likely one (see Vang Petersen 2013, 225–227).

Tangkrogen, Jutland, Denmark (N 56.136°; E 10.210°)
The 11 cm long figurine from Tangkrogen (Fig. 5) was found on the coast of Aarhus Bay in 1969. It is highly damaged by sand corrosion from when it was lying in the sea. This makes it difficult to determine which animal is represented. The general shape resembles the other bear figurines; however, due to its highly damaged frontal section and its eroded snout, the species is not clearly identifiable. The figurine was initially interpreted as a wild boar (Andersen 1980, 28), but Vang Petersen (2013, 227) points out that wild boar was extremely rarely represented in Stone Age art[1] and, in combination with the shape of the head altered due to surface erosion, clearly advocates that it is the representation of a bear.

Unknown findspot, Denmark
Among the possessions of the Royal Danish Art Chamber is a heavily oxidised amber animal figurine of unknown provenance, acquired in the 18th century. It has an elongated body with carefully shaped front and hind legs, which lack their terminal ends due to breakage. Its head is rather large and directed forward with a tapered snout. A groove marks the mouth, but no other anatomical details (e.g. eyes, nostrils, ears) can be identified. A species determination is difficult, due to the stylised shape of the head; however, the figure's resemblance to other amber figurines points towards an identification as a bear.

Bølling Sø, Jutland, Denmark (N 56.171°; E 9.377°)
A 9.6 cm long figurine that resembles a bear is known from the Bølling Sø area. Its exact find spot is unknown; it is stored in the National Museum. Its right side is heavily damaged by fire, and only the head and a front leg of the animal are preserved (https://samlinger.natmus.dk/do/asset/3368 [accessed: 21.06.2021]). Some small parallel cuts on its neck may be remains of a decoration, and long cuts on its back are probably remaining traces from manufacturing.

Lild Strand, Jutland, Denmark (N 57.152°; E 8.962°)
The amber bear (4.2 cm long; Fig. 6) from Lild Strand is a modern fake (see Kabaciński et al. 2011, footnote 1; http://www.kulturarv.dk/fundogfortidsminder/Lokalitet/188309/ [accessed: 23.11.2020]). The fraud was discovered 15 years after the piece had been presented as treasure trove to the National Museum. A closer re-examination of the piece revealed clear traces of electric sawing and mechanical polishing on the surface of the figurine and, after massive publicity in the press, the producer of the forgery revealed his identity and explained his crime as a sort of practical joke.

Linnes, Trøndelag, Norway (N 64.023°; E 9.911°)
The bear figurine from Linnes (Fig. 7) was found in a peat bog on Linesøya together with four other amber pendants (Terberger/Ansorge 2000, 344); it was bought by the Trondheim Museum in 1881 (Gjessing 1926, 299). The length of the figurine is 5.2 cm, and, even though the legs are broken, it can clearly be seen that they were once connected by a bridge. Presumably, after this connection had been broken, a hole was applied to the back in order to attach the figurine to a string (Vang Petersen 2013, 225–226). The figurine has been attributed to the Neolithic Pitted Ware culture (*c.* 5500–4300 cal BP; Terberger/Ansorge 2000, 347), but recently it has been argued (Vang Petersen in press) that the Linnes find might represent a hoard of south Scandinavian amber, which was exported to the amber-poor Norwegian coast sometime during the Neolithic. If so, the Linnes bear figurine with

1 Even though representations of pigs/wild boars do exist, as represented, for instance, by the yet oldest known cave painting (Brumm et al. 2021), or the figurine from Gdansk (Fig. 9.2).

its bridged legs might represent a genuine Palaeolithic ornament, which was washed up during the Neolithic after lying in an inundated Palaeolithic site for thousands of years and then found by amber collectors and exported to Norway together with the four perforated pendants.

Słupsk/Stolp, voivodeship Pomerania, Poland (N 54.454°; E 17.029°)
A bear figurine[2] (Fig. 8) was found in 1886 or 1887 in peat, close to the city of Słupsk (cf. Virchow 1887, 401). In keeping with the other finds, this one also lacks more information on the find situation and a reliable dating. It has repeatedly been discussed whether the figurine was remodelled, but Terberger/Ansorge (2000) concluded that it is in its original condition, with only a polishing of the surface having been applied. The figurine has a natural hole in the distal part of the body and detailed facial attributes. The reinvestigation by Terberger/Ansorge (2000) showed that the facial details are original, thus rejecting earlier assumptions that they might have been modern additions.

Brześć Kujawski, voivodeship Kujawia-Pomerania, Poland (N 52.603°; E 18.899°)
In 1976, a small amber figurine was excavated at the Neolithic site of Brześć Kujawski, site 3 (*c.* 5000 cal BP; Cyrek et al. 1986, 121–122). Its shape cannot clearly be identified as a bear but generally it appears to be zoomorphic (Fig. 9.1).

Zvidze, Madona, Latvia (N 56.852°; E 26.910°)
A small amber bear (?) figurine was found at the Middle Neolithic settlement of Zvidze in Latvia (*c.* 5500–4300 cal BP; Loze 2000, 75; 2003, fig. 3.2). It is carved out of a flat piece of amber and has a perforation in its back (Fig. 10.3). This hole was probably used for suspending it as a pendant in a similar way to other amber pendants from the site, which depict birds. According to Loze (2003, 82), another amber find from the site depicts the frontal part of a bear (Fig. 10.2).

Sārnate, Ventspils, Latvia (N 57.110°; E 21.429°)
At the Neolithic settlement of Sārnate (c. 5900–5000 cal BP) in Latvia, an amber figurine was found in one of the dwellings (Bērziņš 2008, 365). Only the rear part is preserved (Fig. 11) but, due to the shape of the back, and after comparison with the Słupsk/Stolp specimen, the find was interpreted as a bear (Vankina 1970, 111). Its association with several amber beads and pottery dates the assemblage to the Neolithic Comb Ware group (Bērziņš 2008, 407–408).

Suļka, Rēzekne, Latvia (N 56.713°; E 26.785°)
A figurine of a furry animal has been reported from the Comb Ware and Pitted Ware settlement of Suļka (LE-752: 4060 ± 60 bp; 5580–5150 cal BP) in Latvia (Gimbutas 1985, 234; Loze 2003, fig. 2.2; Ots 2006, 50). However, it is unclear whether the figurine actually depicts a bear (Fig. 10.1).

Tamula, Võru, Estonia (N 57.844°; E 26.981°)
At the Estonian cemetery of Tamula (*c.* 5900–2600 cal BP; Tõrv 2018, 138–140), a bear-shaped pendant (Fig. 12) was found in a grave (burial XII; cf. Gimbutas 1985, endnote 5; Ots 2003, fig. 3.1; 2006, 32, 42). Similar to the specimen from Zvidse, it is manufactured from a flat piece of amber and perforated in its back. On its bottom part, small incisions have been identified (Ots 2003, 102).

2 Gimbutas (1956, plate 32) confused the find location of this figurine with an amber boar figurine from Gdansk (Virchow 1884; cf. Terberger/Ansorge 2000, 345–346; Terberger 2003). Due to the anatomical details, Terberger/Ansorge (2000, endnote 15) agree with the interpretation as a wild boar or pig (Fig. 9.2). The find is therefore not further discussed here.

Astuvansalmi, Ristiina, in Mikkeli, Finland (N 61.420°; E 27.523°)
A piece of amber, interpreted as part of a bear (?) figurine (Fig. 13), is reported from Astuvansalmi (Lahelma 2008a, fig. 10). It was found in the water in front of rock paintings at the site, depicting humans and other animals, including a possible bear (Lahelma 2008b, 27; Helskog 2012, 218). These are most likely associated with the Neolithic Comb Ware culture (*c.* 6200–4000 cal BP), which is also underlined by some other amber pendants found at the site (Lahelma 2008b, 34–40). The amber piece, however, does not show any clear signs of deliberate shaping, so the possibility of it being a part of a figurine must be rejected.

Non-amber bear figurines

Even though they are not within the scope of this study, some non-amber bear figurines will be briefly mentioned in the following. This compilation is not meant to be exhaustive, but is intended to present a selected assemblage of finds from various contexts and timeframes.

Geißenklösterle, Baden-Württemberg, Germany (N 48.398°; E 9.771°)
From the upper Aurignacien layers of the Geißenklösterle cave in the Swabian Alps (*c.* 42,000–38,000 cal BP), a small figurine made of mammoth ivory was found that probably depicts a cave bear (*Ursus spelaeus*). Even though the *c.* 5 cm tall figurine is not a depiction of a brown bear, this find is worth mentioning here as it represents one of the oldest bear figurines in the countries under consideration (Wamers 2015, 26–27).

Dolní Věstonice, Moravia, Czech Republic (N 48.892°; E 16.626°)
At the Gravettian site of Dolní Věstonice, the world's oldest ceramics have been found with an age of 24,000 years, consisting of more than 6,500 burnt fragments, which include almost 4,000 fragments of ceramic figurines. Among these is the famous "venus" of Dolní Věstonice, but there is also a bear figurine (Fig. 14) with a total length of 7.6 cm (Vandiver et al. 1989). In contrast to the amber figurines, which appear to have been worn as pendants, there are no perforations or other evidence that the bear and other clay figures from Dolní Věstonice were used as such.

Bonn-Oberkassel, North Rhine-Westphalia, Germany (N 50.712°; E 7.158°)
Several grave goods that are of interest for this contribution have been found in the burial from Bonn-Oberkassel (Late Pleistocene/Federmesser groups, *c.* 14,200 cal BP): One ornamented object made of elk antler most likely represents an animal, but its head and legs are broken off. Its body shape shows striking similarities with that of the figurine found at Weitsche, Germany (cf. Giemsch et al. 2015, fig. 1). Another object that was found in the grave is a *c.* 20 cm long bone artefact, commonly identified as a hairpin (Fig. 15). On its proximal end it shows a modelled animal head that can be interpreted as that of a bear, based on its rounded ears, but other interpretations cannot be fully ruled out as the shape of the head itself is not so reminiscent of a bear (Giemsch et al. 2015, 242–246). Furthermore, a baculum of a bear (*Os penis*) with several cutmarks and haematite colouring was found in the grave (Giemsch 2017; Street 2002, 280).

Äleby, Östergotland, Sweden (N 57.886°; E 15.861°)
At the Swedish Iron Age site of Äleby, several small clay figurines were found in connection to a possible stone-setting. Among these, two 1–2.6 cm large figurines resembling bears "could be a good deal earlier than the Iron Age material" (Janzon 1983, 3–4). However, it remains unclear how Janzon arrived at this conclusion.

Tråsättra, Uppland, Sweden (N 59.472°; E 18.354°)
At the Neolithic Pitted Ware culture site of Tråsättra (*c.* 4800–4200 cal BP), Sweden, more than 250 clay figurines, and fragments thereof, of different animals as well as humans were found. They mainly represent humans (n = 204), but at least six pieces have also been identified as bears (Björck et al. 2019, 121–123; cf. Lindström, this volume).

Hietaniemi, Kuhmo, in Kainuu, Finland (N 64.280°; E 29.457°)
At the Finish site of Hietaniemi, an animal clay figurine was found that can be interpreted as a bear representation (cf. Janzon 1983, fig. 6.4). It measures 3.6 cm, but was originally longer as it is damaged on its rear part.

Lake Lubāns lowland, Rēzekne, Latvia (N 56.766°; E 26.861°)
From the lowland of Lake Lubāns, a small bear figurine made of clay has been reported (Loze 1979, pl. 52.5). The sites that are compared by Loze (1979, 138–139) all date to the Late Neolithic and Early Bronze Age Corded Ware culture (*c.* 5100–4400 cal BP).

Zvejnieki, Vecate parish, Latvia (N 57.776°; E 25.229°)
A small clay figurine from the Late Mesolithic/Early Neolithic Latvian burial ground of Zvejnieki (*c.* 9500–4600 cal BP) was originally interpreted as a bear. This resemblance is, however, limited, so Zagorska et al. (2018, 113) consider it to be a representation of a human embryonic figure.

Çatalhöyük, Konya province, Turkey (N 37.666°; E 32.825°)
Two small bear figurines made of clay, dating to *c.* 8400–8000 cal BP, were found at the Neolithic/Chalcolithic site of Çatalhöyük in Turkey (Martin/Meskell 2012, 407, tab. 1.4). Many of the figurines were made identifiable by the explicit formation of their tails (Meskell 2015, 7–8). In the depictions at the settlement bears also play a role, but they are not frequently depicted. Remarkably, these are most frequent in an excavation area where other quadrupeds and wild animals, like boars or foxes, are more often depicted (Meskell 2015, 2).

Interpretation

As has been shown above, bear figurines are not only connected to hunter-gatherer groups, nor are they exclusively made of amber. As this contribution is focussed on the figurines made of the ancient tree resin, the other examples mentioned here are mainly used for opening a wider perspective. Since humans have long created representations of the world around them, from cave paintings to founder myths, this provokes the question of the role the figurines played and what possible implementations for understanding prehistoric human behaviour, environmental perception, and social interactions they provide.

First of all, it is important to critically evaluate the dating of the finds before further analyses regarding their use or meaning are conducted, as the amber bear figurines existed against a specific socio-environmental and cultural background. Through understanding when and where they were produced and utilised, further insights may be gained for contextualising them. Consequently, if the finds are not chronologically placed, hence lacking all contextual information, they become nothing but bibelots from the past.

How old are they – really?

Due to the difficulties associated with dating the bear figurines from the Baltic Sea region, their decoration has been a classic means for placing them into an archaeo-cultural context. According to the typological approach, the decoration patterns of well-dated artefacts are used for indirectly dating the contextless amber bear figurines. Simplistic patterns, however, like boreholes, zig-zag lines, and chevrons, have repeatedly been used throughout time, so using them as a sole chronological identifier inevitably comes with pitfalls. As direct dating of other artefacts has repeatedly shown, typo-chronology is a rather insecure tool. For instance, with respect to the chronological precision of specific Mesolithic bone points, it has recently been suggested that the duration of certain types is far more unreliable (and less archaeo-culturally determined) than previously implied; an example is the so-called Duvensee-type bone point, which had once been recognised as a typical element of the Early Mesolithic toolkit in the southwestern Baltic area. Direct dating of such implements, however, has shown that they were already present in the Late Palaeolithic and are regionally divergent with respect to chronology (e.g. Cziesla/Pettit 2003; cf. Hartz et al. 2019, fig. 10). Larsson (2000, 33) further states, discussing decorative elements on Mesolithic objects from Scandinavia, that "[a]ttempts to find chronologically related motifs or combinations of motifs have been made without achieving convincing results".

Vang Petersen (2013, 229) discusses similarities between the patterns of a bone rod from Fogense Enge, Denmark, which was directly dated to the Late Palaeolithic, and the bear figurine from Resen. He concludes that, contrary to earlier assumptions, the pattern on the bear figurine cannot "be taken as an indication of a (Late) Mesolithic date". Hence, several of the figurines with zigzag and chevron patterns should possibly be dated to the Late Palaeolithic. As the decoration patterns, especially the densely packed zigzag-lines, appear more often on reliably dated Late Palaeolithic art objects (Vang Petersen 2018, fig. 11; cf. Płonka et al. 2011), one should rather place them in earlier contexts. The chronological range of the use of such patterns remains nonetheless unclear; at Wustermark 22, Germany, such a pattern has been found on an elk antler tool, which has been dated to the Pleistocene/Holocene transition (around 11,600 cal BP; Ua-20962: 10,005 ± 70 BP; 11,800–11,260 cal BP; Gramsch et al. 2010). Yet it is unclear whether this tool, which is formally not securely identifiable (Gramsch et al. 2010, 114), can be understood as being Mesolithic after all (cf. Grimm et al. 2020, 15).

Consequently, this shows that relying on the decoration for dating objects using such universal patterns is too insecure to apply. Additionally, Vang Petersen (2013, 233–234) underlines that amber bear figurines "differ completely from other (well-dated) Mesolithic works of art, which primarily consist of non-figurative decorations or heavily stylised anthropomorphic or zoomorphic drawings incised into the surface of tools, implements and personal objects". Płonka (2003, footnote 191) even excludes the Linnes figurine from his considerations on Mesolithic portable art "because the style of this piece and the pendants discovered in the same assemblage […] are more likely to be associated with the Neolithic". However, even for the Scandinavian Neolithic, figurative art is extremely rare. Mesolithic art of this kind is mainly known from eastern Europe, with different (naturalistic) representations of elk, but the main patterns used are abstract decoration (Płonka 2003, *passim*).

As a conclusion and based on the current state of research, too few indications speak for the association of the amber bear figurines from around the Baltic Sea with the Mesolithic. Therefore, their association with the Late Palaeolithic becomes slightly more likely. It can be argued (Vang Petersen in press) that the amber bear figurines might represent the last phase of Palaeolithic figurative art. Along with figures of other important big game species such as horse and elk, these amber bears represent a continuation of the Magdalenian tradition of amulets and personal objects decorated with naturalistic depictions of animals. The findings also indicate that, along with the transition from the Magdalenian to the Azilian/Federmesser culture in the Allerød period, a shift from reindeer and horse of the open tundra towards forest species like elk and bear took place in the hunters' ideology.

However, this picture may change if reliably dateable finds are unearthed, or methods for direct age determination for the production of the pieces are developed. To this date, the only amber bear figurines from the circum-Baltic region that can be somewhat reliably dated are the finds from Brześć Kujawski, Poland, the burial in Tamula, Estonia, and the settlement site of Sārnate, Latvia – all these are from Neolithic contexts.

Why amber?

Amber has always been regarded as a special material. As can be seen from the detailed Late Palaeolithic figurines or its use for pendants and ornaments during later times, the material has been so valuable that whole industries have been built around it. This is exemplified by the long-distance trade in the Bronze Age which already then ensured that Baltic amber was transported to the Mediterranean (e.g. Kristiansen/Suchowska-Ducke 2015).

The use of amber has a long tradition around the Baltic Sea, as its outcrops have been eroding since the Ice Age, so fragments of the prehistoric tree resin are regularly washed ashore. Its use for prehistoric mobile art and ornaments can be traced back to the Late Palaeolithic (see above), where the origin of creating naturalistic amber figurines can most probably be found. A re-use of ancient artefacts is also indicated by finds that are discovered out-of-context. For instance, the Linnes bear was found in an area without amber outcrops. So, either its raw material, or the figurine itself, must have been imported from further south. If a Late Glacial dating of the figurines is accepted (see above), this indicates the use of traded ancient artefacts in a Pitted Ware culture context. An example of Neolithic reuse of a clearly Mesolithic decorated pendant has recently been described (Vang Petersen in press).

The use of, and fascination for, amber may have had many different reasons: The material has several remarkable characteristics, it is lightweight and floats in salty water, even though it appears to be a stone. It feels nice and warm against the skin; when polished, it becomes translucent and shiny, and if burnt, the scent is unmistakable and fragrant. The most fascinating feature is probably that when rubbed against hair or fur it develops a static electrical charge and can emit green sparks visible in the dark. Furthermore, we can expect that even during the Stone Age the fossil material was understood as such and therefore utilised on purpose; people probably even then understood that amber is ancient tree resin. So, it is possible to imagine that amber may have provided a magic connection to the metaphysical world.

Why bears?

While the bear figurines' chronological association with any timespan remains foggy, the question of why bears were depicted might be addressed more easily. "What these figurines might mean or how they were socially active depends a great deal on how animals were seen, how humans saw themselves and how the relations between them were perceived" (Valera et al. 2014, 16). To fully understand the function and purpose of the figurines, the relevance of the socio-cultural environment into which they have been placed must be recognised. However, as long as this remains a challenge, the question of why bears have been depicted in a special material like amber can nonetheless be discussed. Currently, only bears and elks appear most regularly in the amber art around the Baltic from the Stone Age (Iršėnas 2000). The compilation by Iršėnas (2001) also shows some other quite clearly identifiable species (e.g. beavers), but those that are most common are elks, bears, and humans. Disregarding the latter, the question arises of why elks and bears are such a predominant subject for prehistoric amber figurines.

The depiction of the tangible and intangible worlds is a very old tradition in human societies: Ever since the Upper Palaeolithic, cave paintings and rock carvings were used for conserving perceived situations in real life. But they most likely also invoked powers and spirits with magic abilities to help

(feed) and protect the people who made them and carried them around. Big animal species like elk and bear may have been regarded as especially magically gifted, as they were able to move across the borders between different worlds – swimming in the sea, shedding antlers, or sleeping all winter underground, etc. (cf. Helskog 2012). The depiction of daily life situations, as for instance in the Alta rock carvings, Norway (Gjerde 2019), does not contradict any magical elements, as a strict separation between profane and sacred is a modern construct. Hence, they possibly appear more as representative scenes from everyday life than metaphysical representations.

In contrast, the amber figurines appear as depictions of single individuals. Hence, it is significant that they are more directly bound to the animal as such, rather than to the scenery, making them individual tokens. Consequently, their meaning is created through them themselves, instead of through them interacting with the environment. They might therefore be considered as providing a function or acquiring a social role (cf. Valera et al. 2014, 16–19), like an amulet or manifestation. However, as bear bones are a rather rare element at Mesolithic and Neolithic sites (cf. Klassen/Gregersen, this volume), it seems rather unlikely that they can be seen in connection with hunting magic on a regular basis. It is worth mentioning, however, that the Neolithic Pitted Ware culture might have had a special relationship to bears, as is represented by comparably high numbers of such bones in the assemblages (cf. Klassen/Gregersen, this volume), and indications for the transport of commodities made of them to areas out of their natural range.

Generally, the bear's effective relevance for human subsistence, excluding its value for identity or cultural practices, must be considered rather low, which might partly relate to the expectable lower density and visibility of the animals in the landscape, compared with, for instance, that of deer or wild boar. Nonetheless, the nutritional value of bear meat is very good (Schmölcke et al. 2017).

Can amber bear figurines therefore be seen in a more metaphysical context? As has been shown, bears are a very elusive species even when not hibernating (cf. contributions on Bears in biology, this volume). Therefore, the chances for an encounter with a bear are extremely low today and were most likely low in the dense forests of the past as well. As dogs were already part of hunting communities at that time, they will have supported the chase and discovery of prey and thus probably played a relevant role in occasional (?) bear hunts. The fact that humans hunted and exploited bears for meat as well as material for tools and ornaments is undoubted, but it should be considered that bears were usually not their main prey but an exception, as can be seen from the zooarchaeological studies. It can be assumed that bears were a rather uncommon and exceptional sight also for prehistoric hunter-gatherers, so the depiction of them might have served as a memorial or ornament. This might even be reflected by their value as totems for specific groups (cf. Helskog 2012, 214).

Another perspective proposed by Hill (2013) overcomes the rather modern dichotomy of humans and animals and thus recognises that some societies, especially foragers, do not clearly differentiate between the two. Larger predators, especially, tend to be seen as relational to people,[3] according to ethnographic studies, and might have received similar treatment (e.g. Hill 2013, 119–120; Losey et al. 2013). Consequently, the amber bear figurines (and those made of other materials) can rather be understood as representations of other-than-human persons than as mere depictions of a more distant environment. Hence, the figurines incorporated a means for directly interacting and exchanging with these other parts of the societies (i.e. the bears). Therefore, it is not relevant that bear bones are represented in relatively low numbers in the archaeological assemblages, as "interaction is sensual, ongoing, and may involve the living and the dead, in addition to prey and hunter" (Hill 2013, 126).

3 This might also be true for smaller animals and could explain the depiction of these as amber figurines as well (e.g. a beaver figurine from Valma [Estonia]: Ots 2003, 104). Schmölcke et al. (2017, 903) propose „the beaver was potentially regarded as a kind of water spirit – comparable to the bear as a spirit of the forest".

Iršėnas (2007, 7–8) highlights that the mobile art[4] from the Baltic region has received far less attention than, for instance, Upper Palaeolithic cave paintings, and consequently it has also been less subject to diverging interpretations. Many of the interpretations of such objects have been focussed on their sacrificial meaning, so understanding them as having a more profane use, e.g. as toys, is more uncommon (cf. Iršėnas 2007, 8–10). Iršėnas agrees with Larsson's (2000, 33) statement that "the present-day division between sacred and profane is a delusion", which thus accentuates that a dualistic view on many prehistoric artefacts is a modern post-Renaissance perspective. Different ethnographic examples further underline how inseparable (perceived) profane and metaphysical functions are (Iršėnas 2007, 11–14). There is no reason to believe that categorising artefacts based on richness of detail or elaborateness, be it tool vs. toy, sacred vs. profane, mature vs. child (cf. Iršėnas 2007, 15–17), brings us any closer to reality.

Conclusion

For understanding the role and purpose of amber bear figurines, as well as those made of clay, it is important to be aware of general preconceptions underlying such endeavours: while "parallel functions do *not* necessarily imply parallelism of form" (Downs/Stea 1973, 5), parallel forms do not necessarily imply parallelisms of function either. Keeping this in mind, the role of amber bear figurines from (potential) hunter-gatherer contexts might have served a very different purpose than the later figurines from Neolithic sites. As the use-wear traces on some of the amber figurines show, they had been attached to strings and thus might have been used in an ornamental form, perhaps as an amulet or an attachment to clothing. Yet this neither excludes nor implies a single function as an ornament or ritual token.

Even if the amber bear figurines are low in number, they represent a sparse but re-occurring find type. Therefore, deciphering underlying patterns and possible meaning is necessary to integrate them into the physical and metaphysical landscapes of the past. As archaeology is a time- and space-bound research field, understanding the cultural context of objects is mandatory for interpreting their purpose. Alas, the chronological information is completely lacking for most of the amber bear figurines under consideration, and it has been shown that indirect dating techniques only work to a limited extent.

As demonstrated, the amber bear figurines from around the Baltic Sea are an archaeological phenomenon that finds some parallels in other materials as well as in other depicted species. They can therefore be understood as a rare but widespread find type that most likely had some inherent metaphysical purpose and social context, even if these cannot be reconstructed due to their lack of archaeological context. All things considered, the current evidence highlights that the amber bear figurines might very well be associated with Late Palaeolithic groups or the early Neolithic, as comparable mobile art is known from these periods. The previous practice of assigning them to the Mesolithic must be critically questioned. Interpreting more generously, amber bear figurines are unique evidence of ritual activities and are potentially magic tokens from prehistory. Displaying the most powerful and human-like creature of the forest (cf. Schmölcke et al. 2017, 902), by recreating it from an ancient material with unique characteristics, must have resulted in the most powerful amulet-types known from the Stone Age of northern Europe.

4 The term „mobile art" has to be understood in this context as a *terminus technicus* for all shaped and decorated objects that are not stationary. This includes, for instance, ornamented tools, figurines, and decorated pendants. This explicitly does not incorporate any functional or meaning-related interpretation (cf. Larsson 2000, 33).

Acknowledgements

Thanks to Patricia Tellhelm and Grzegorz Osipowicz for help with the acquisition of literature, and Valdis Bērziņš for helping with information on the Sārnate specimen. Mari Tõrv helped us tremendously with acquiring a photograph of the Tamula specimen.

D. Groß: This research is part of the Centre for Baltic and Scandinavian Archaeology's (ZBSA) strategic research topic "Human and Animal Studies". Research on this topic was carried out under the umbrella of the CRC 1266 (funding by the Deutsche Forschungsgemeinschaft [DFG, German Research Foundation] – project no. 2901391021 – SFB 1266), which is thankfully acknowledged.

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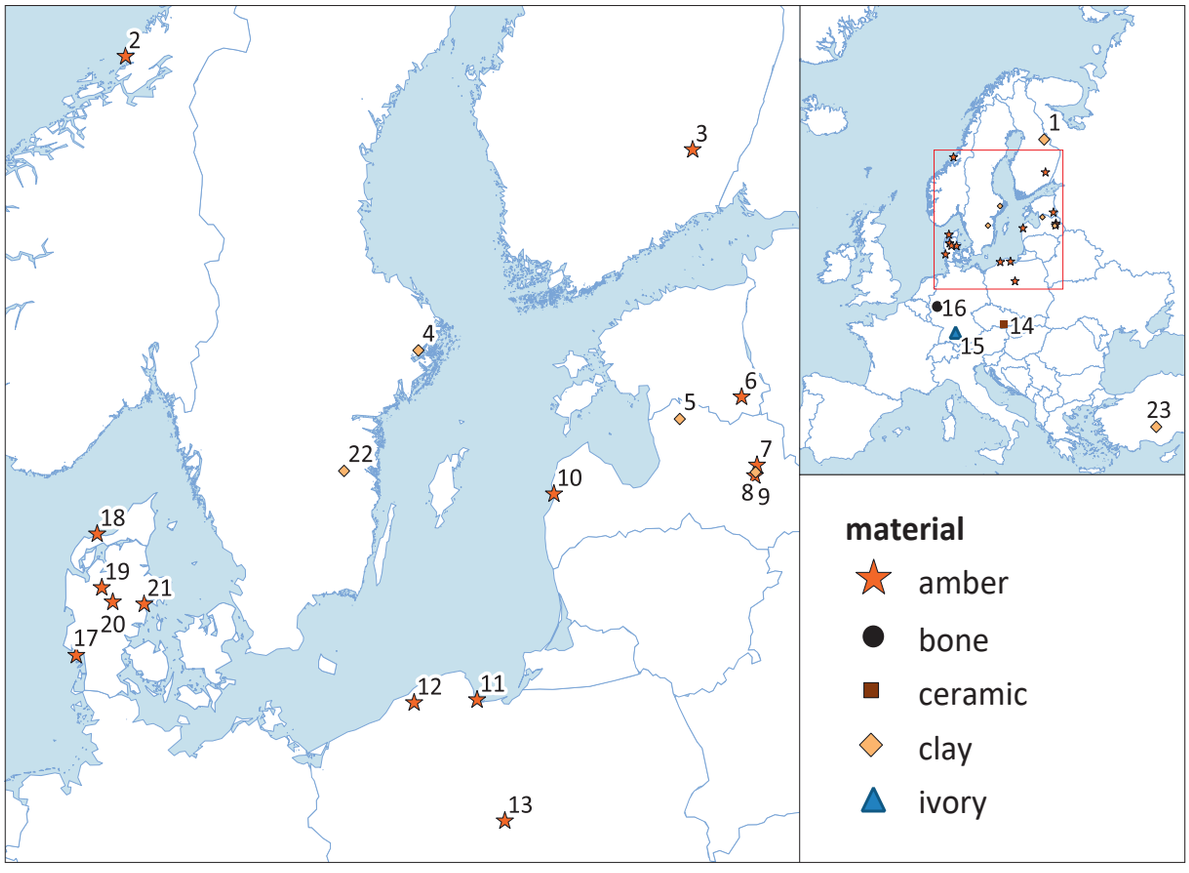


Fig. 1. Overview of sites mentioned in the text (map: D. Groß, based on: © EuroGeographics for the administrative boundaries). 1: Hietaniemi (Finland); 2: Linnes (Norway); 3: Astuvansalmi (Finland); 4: Tråsättra (Sweden); 5: Zvejnieki (Latvia); 6: Tamula (Estonia); 7: Zvidze (Latvia); 8: Lake Lubāns (Latvia); 9: Suļka (Latvia); 10: Sārnate (Latvia); 11: Gdansk (Poland); 12: Słupsk/Stolp (Poland); 13: Brześć Kujawski (Poland); 14: Dolní Věstonice (Czech Republic); 15: Geißenklösterle (Germany); 16: Bonn-Oberkassel (Germany); 17: Fanø (Denmark); 18: Lild Strand (Denmark); 19: Resen (Denmark); 20: Bølling Sø (Denmark); 21: Tangkrogen (Denmark); 22: Äleby (Sweden); 23: Çatalhöyük (Turkey).



Fig. 2. The elk figurine from Weitsche, Lüchow, Lower Saxony, Germany (after Veil 2012, fig. 3; photos U. Bohnhorst, compilation: S. Veil, © Landesmuseum Hannover).



Fig. 3. The Fanø bear, Jutland, Denmark (NM A 52089; after Vang Petersen 2018, figs. 2; 13a,b).

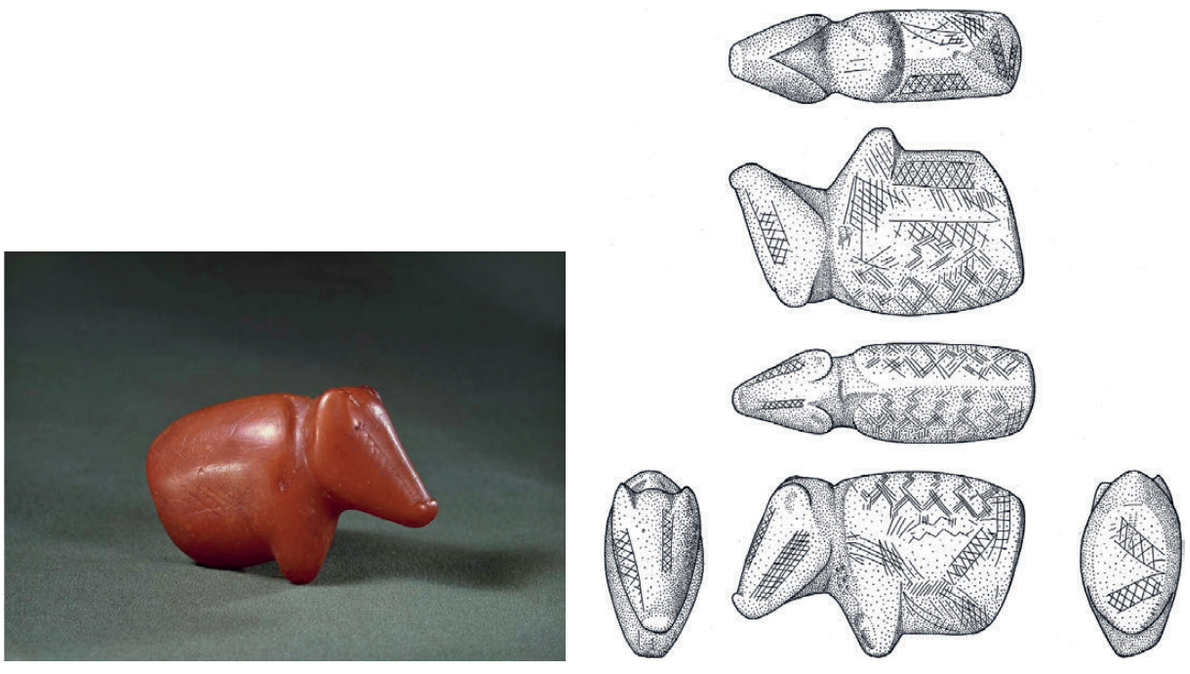


Fig. 4. The Resen bear, Jutland, Denmark (NM A 8411; after Vang Petersen 2019, fig. 5).

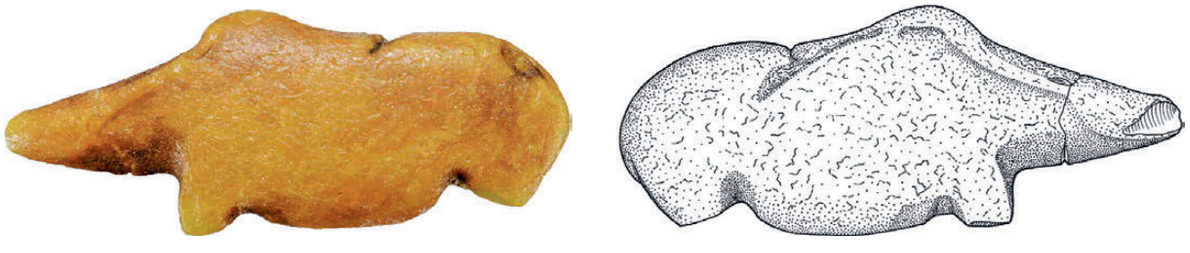


Fig. 5. The Tangkrogen figurine, Jutland, Denmark (NM A 49747; after Vang Petersen 2018, fig. 13c,d).



Fig. 6. The Lild Strand figurine, Jutland, Denmark. Modern fake (NM A 52274, photo © Danish National Museum).

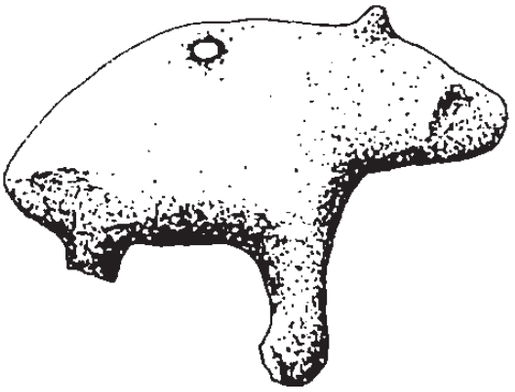


Fig. 7. The Linnes bear, Trøndelag, Norway (after Terberger/Ansorge *2000, fig. 4.9).*

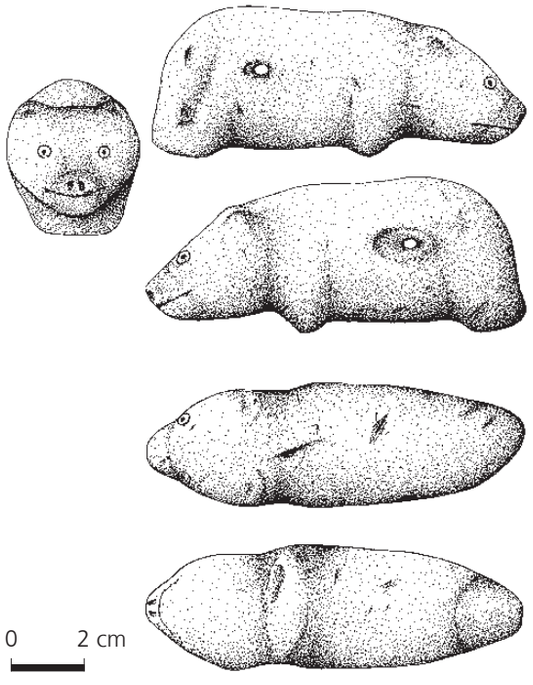


Fig. 8. The Słupsk bear, voivodeship Pomerania, Poland (after Terberger/Ansorge *2000, fig. 1).*

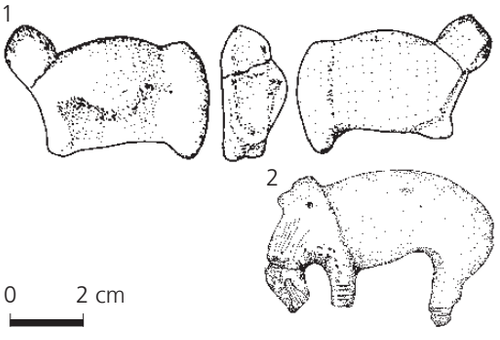


Fig. 9. Amber figurines from Poland. 1: Brześć Kujawski, site 3 (after Cyrek *et al. 1986, fig. 16.2); 2: Boar/pig (?) figurine from Gdansk (after* Terberger/Ansorge *2000, fig. 5.1).*

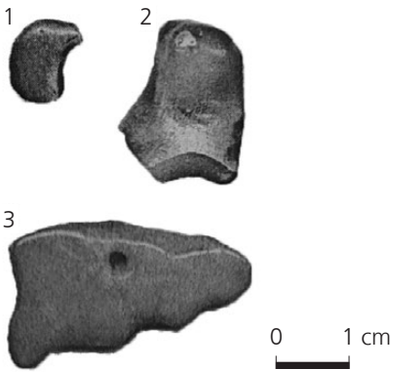


Fig. 10. Amber figurines from Latvia. 1: Suļka; 2–3: Zvidze (after Loze 2000, figs. 2.2; 3.2,8).

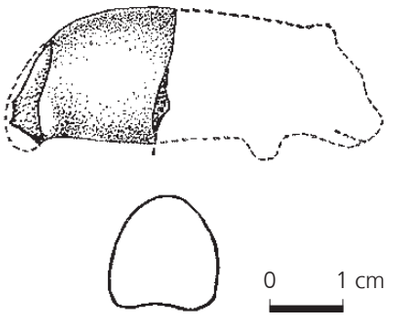


Fig. 11. The possible bear figurine fragment from Sārnate, Ventspils, Latvia (after Vankina 1970, plate LV.1).

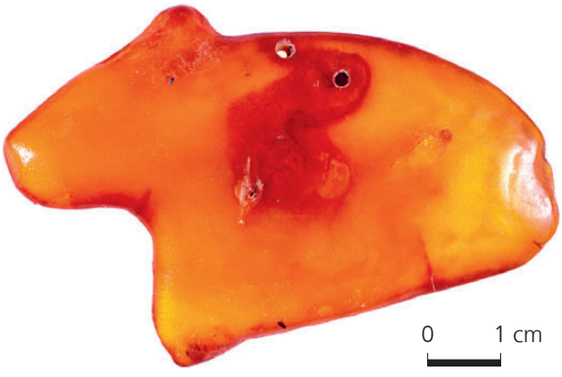


Fig. 12. The Tamula specimen, Võru, Estonia (photo M. Usler, Archaeological Research Collection, Tallinn University, AI 4118 1751).



Fig. 13. The natural amber lump resembling a bear-head from Astuvansalmi, Ristiina in Mikkeli, Finland (Finnish Heritage Agency, Inventory ID KM27146:1, CC BY 4.0).



Fig. 14. The ceramic bear figurine from Dolní Věstonice, Moravia, Czech Republic (Moravian Museum, ID: DV 30014, used with permission by the museum).



Fig. 15. The hairpin from Bonn-Oberkassel, North Rhine-Westphalia, Germany. Different views (© LVR-LandesMuseum Bonn).

The bear in Late Iron Age and Viking Period Scandinavian art – a survey

By Sigmund Oehrl

Keywords: Scandinavia, bear, iconography, imagery, Late Iron Age, animal art

Abstract: The paper constitutes a survey of bear depictions in the 1st millennium AD from Sweden, Norway, and Denmark as well as Scandinavian-influenced parts of England, including certain, almost certain, and possible images of bears. Chronologically, the relevant material ranges from the Roman Iron Age to the Late Viking Age, most of it dating to the Merovingian/Vendel Period and the Early Viking Age. The images occur in quite different contexts, on different objects and bearing different possible meanings (military and heroic contexts, commemoration and sepulchral contexts, female jewellery, figurines and more). Some recent finds are also considered. The main conclusion is that there are many more depictions to be considered, and that the bear is not as rare in Late Iron Age and Viking art as many scholars have so far supposed.

No detailed study and comprehensive collection of bear depictions from the 1st millennium AD in northern Europe has so far been available.[1] There are only a few well-known depictions of bears that are frequently mentioned in research literature, in particular those of the Vendel Period *Pressblech* imagery and the bear figurines on Vendel Period spearheads (both discussed below). Scholars dealing with Scandinavian art or bear-related topics in archaeology repeatedly state that there are not many depictions of this kind and that bears are very rare in the art and iconography of Late Iron Age and Viking Period Scandinavia. Lotte Hedeager concludes that the bear is "pretty much non-existent" in Scandinavian imagery and that "its lack of representation in the iconography throughout the entire Iron Age and the Viking Age is [...] quite remarkable" (Hedeager 2011, 94–95; cf. Hedeager 2004, 244–255), compared to the importance of the bear in pre-Christian religions, burial customs, Old Norse literature, personal names, and folk belief (see several papers, this volume). As this seeming lack appears to be in need of explanation, Hedeager assumes: "Perhaps the only explanation is that the bear [...] was feared and considered so taboo that it could not be depicted" (Hedeager 2011). However, after collecting and investigating the relevant material more intensively, I am convinced that there are more depictions than have been considered so far, and that the bear is not as rare in Late Iron Age and Viking art as Hedeager and other scholars suppose. In the following, this material and their contexts will be presented, not

1 The most comprehensive survey so far was presented by Sebastian Beerman in his German Master's thesis on bear claws and bear skins in burials from the Pre-Roman Iron Age to the Migration Period (Beermann 2016, 61–71).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 961–990 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134374

in the form of an in-depth study, but as a brief overview, in chronological order, as a basis for future discussion.

When searching for visual representations of bears in Late Iron Age and Viking iconography, we have to be aware of the fact that, usually, this kind of art is non-naturalistic. Animal depictions during these periods can be primitive, fanciful or highly stylised, and they can be hybrid, mixing up different species (Pesch 2012). Naturalistic, or even semi-naturalistic animal depictions, featuring crucial characteristics that clearly indicate a certain species, are exceptions. Our zoological identification – if we believe that the depiction of a certain animal species is intended at all – is dependent on the presence of typical physical features and crucial animal characteristics. However, in many cases, there will always be some subjectivity in the zoological interpretation. What physical features do brown bears have that can be used by an artist to indicate this specific predator? Brown bears are generally bulky, they have large bodies with relatively short and stocky limbs and a strong neck, massive heads (the forehead is high and rises steeply), a longish but relatively short snout with predator teeth and small rounded ears, they have fur, shaggy hair, large paws with five long non-retractile claws, and short tails. As a special feature, bears are able to stand and walk on their hind feet.

The earliest relevant visual representation featuring bear-like characteristics known to date is a small figurine made of soapstone from Modvo in Sogn og Fjordane, Norway, which is about 7 cm wide and 6 cm high (Fig. 1; cf. Hvoslef Krüger 1988, 362). It was found in a house foundation dating to the Roman Period, which means roughly between the birth of Christ and AD 400. Its actual context and function are unknown. From this period, the first centuries AD, indigenous pictorial art in Scandinavia is relatively scarce; only a small number of animal depictions are known, and these are very much dependent on Roman influences and models (Blankenfeldt 2015).

The "age of the image" starts in the Migration Period, about AD 400, when Germanic art became increasingly independent and started to establish itself in large parts of central and northern Europe, with a sheer explosion and flood of pictures (Pesch 2012, 651). The main motifs of this newly-established art, usually very stylised but sometimes more or less semi-naturalistic, are animals. However, there is no Migration Period depiction that can, with any certainty, be regarded as a bear. Some depictions seem to represent predators with more or less bear-like body shapes, but they lack any clear features. Mention can be made of the beasts on the famous gilded silver relief brooch from Hol in Sør-Trøndelag, Norway (Fig. 2; cf. Magnus 1975, 66; 2014, 75–77, figs. 4–5; Beermann 2016, 64), and a carved figure on a wooden piece of unknown function from Evebø in Sogn og Fjordane (Fig. 3; cf. Straume 1962, pl. 16; Magnus 1975, 64–66). Interestingly, this enigmatic item belongs to the grave of a high-ranking warrior who was buried lying on a bear skin (see Grimm, this volume). Nevertheless, animal images like these remain completely unclear, though they possibly represent bears or another kind of beast or mythical monster (Beermann 2016, 64–65 with more such dubious cases).

From the following era, the Vendel or Merovingian Period, i.e. between the 6th and 8th centuries, more relevant depictions are preserved. A well-known and very famous one is the cast bronze die A from Torslunda on the isle of Öland in the Baltic (Fig. 4). The four Torslunda dies (Hagberg 1976; Hagberg et al. 1991, 257; recently Samson 2020, 252–264) were used for the production of stamped bronze sheets (*Pressbleche*; Fig. 5), decorating high-quality warrior helmets, which are known from several Swedish elite burials (Böhner 1994). Die A depicts a warrior flanked by two bears (Helmbrecht 2011, 102 fig. 11a, cat. no. 591). The beasts are standing on their hind legs, grasping the man's arms and touching his head with their snouts, as if they were kissing or biting him. The warrior is holding a knife or dagger in his hand and, with the other hand, he is stabbing one of the bears with his sword.

There is a surprisingly similar depiction from the Continent, on a silver *phalera*[2] found in an Alamannic elite burial in Eschwege in Hessen, Germany (Fig. 6; cf. Böhner 1991). However, in this case, the man is apparently naked and completely unarmed, presenting his empty hands, holding them close to his body. There is good reason to believe that this image is influenced by the iconography of Daniel the prophet (ibid., 702–704; cf. Holzapfel 1973, 26–28; Holmqvist 1938, 92). On finds from the Merovingian Period, Daniel in the lions' den is frequently depicted, in particular on belt buckles from the Burgundian territory in present-day France and Switzerland (Jörg/Martin 1984). The praying prophet is always flanked by two lions. The fact that the beasts, defeated only by God's will, are bowing to the (of course unarmed) prophet, is represented by specific gestures, mainly by licking Daniel's garment or his feet[3] – or sometimes by touching his face with their snouts, licking, kissing, snuggling like a faithful dog, as on a Merovingian Period belt buckle from unknown find spot in Spain (Oxenstierna 1956, 76–77 fig. 156; Holzapfel 1973 12–13 fig. 2), and a Merovingian Period disc brooch from Sprendlingen in Rheinland-Pfalz, Germany (Kühn 1941/1942, 158; Klein-Pfeuffer 1993, no. 293; 2015, 266 fig. 2,4; see Figs. 7–8). Later, in Romanesque art, this gesture is depicted more frequently (e.g. Debidour 1961, fig. 209; Holzapfel 1973, fig. 1).

The same Christian motif appears to be depicted on the *phalera* from the Alamannic grave in Eschwege. Many Alamannic elite burials of this period contain Christian features. First and foremost, the group of gold sheet crosses must be mentioned (Böhme 1998; Terp-Schunter 2017), but also further Merovingian Period *phalerae* decorated with Christian imagery, such as equestrian saints or The Mother of God (Fingerlin 2010; 2012). On the Eschwege *phalera*, however, the biblical lion turned into the most impressive and most dangerous indigenous predator species – the bear. Nevertheless, the meaning of the motif is still the same: The defenceless human figure is rescued only by prayers and divine help. Probably, this Christian message is also intended in the case of the gold and garnet *cloisonné* mounts on the purse lid from the Anglo-Saxon princely ship burial of Sutton Hoo, East Anglia, England, dating to the 7th century AD (Bruce-Mitford 1975–1983). The Anglo-Saxon "Daniel" is depicted without weapons, performing a hand gesture that could be regarded as praying or as a sign of helplessness, while the lions have been transformed into wolves instead of bears (Fig. 9; cf. Holzapfel 1973, 26–28; Hauck 1982, 352–359; Böhner 1991, 702–703).

The artist from Torslunda, however, equipped his "pagan Daniel" with weapons, transforming the Christian motif into a heroic image. Some scholars even tried to name the depicted hero – e.g. Ragnar *loðbrók* (Schück 1926, 75–77) and Beowulf (Hauck 1982, 352–356) have been suggested, which is hardly convincing; others tried to argue that the bear killer represents a young man performing a kind of initiation ritual, supposedly connected with the cult of Óðinn (cf. Ström 1980, 266–267) and the *berserkir* (e.g. Nordberg 2003, 233–235; regarding the *berserkir*, see also Sundqvist, this volume). Worth mentioning at this point are the *Res gestae*, written by Ammianus Marcellinus at the end of the 4th century AD. According to Ammianus, among the probably eastern Germanic tribe of the Taifals, young men had to kill a boar or a bear in order to be admitted to the warrior community (liber XXXI, cap. XVI: Seyfarth et al. 1978, 31; Ranke/Reichstein 1976; see Hurka, this volume).

A similar "heroisation" or "paganisation" of the Daniel motif appears to have been implemented in the imagery of a sculptured Viking tombstone (a so-called hogback, see below) from Sockburn in Durham County, dating back to the 9th or 10th centuries;[4] an apparently naked man is surrounded by

2 A *phalera* is a decorated disc, originally representing a Roman military award but later belonging to luxury horse harnesses.

3 Concerning this specific element see e.g. Kühn 1941/1942, fig. 1–18; Werner 1977, 310–311 fig. 22 pl. 99; Klein-Pfeuffer 1993, 202–203; Oehrl 2019a, 141.

4 Cramp 1984, 143–144 fig. 146; most recently, regarding interpretation and research history: Oehrl 2011, 154–162; 2019a, 139–142.

a group of animals and flanked by a pair of huge and bulky four-legged beasts. One of the beasts is touching the man's hand with its mouth. Most probably, the image should be regarded as an imitation of the Daniel motif as it is depicted on many other early medieval insular stone monuments, such as the hogback from Lythe in North Yorkshire (Kopár 2012, fig. 28), the high cross from Dysert O'Dea in Ireland (Henry 1933, fig. 49), and the stone slab no. 14 from St. Vigeans in Scotland (Allen 1903, fig. 285A; see also Oehrl 2019a, pl. 112). However, as a specific feature, the Anglo-Scandinavian Daniel from Sockburn is equipped with a battle axe that can be seen behind his right arm. Interestingly, the "lions" on the Sockburn hogback could be described as bear-like. As will be discussed below, bears actually play an important role in the iconography of the hogback group.

On the background of the bear killing scene from Torslunda A, it is plausible to regard the strange looking beast on Torslunda die B (and the *Pressblech* images from Vendel) as a bear as well, as has been supposed by numerous scholars (e.g. Beck 1964, 45–50; Ström 1980, 266–267; Nyman/Hagberg 2006, 77), but in a much more stylised version, of course (Figs. 10–13). The Torslunda die B depicts a warrior with a battle axe, fettering the stylised bear-like monster, holding it like a dog on a leash, while the creature's limbs seem to be knotted together.[5]

The Swedish archaeologists Wilhelm Holmqvist (Holmqvist 1939, 151–152; cf. Romdahl 1922, 221) and Birgit Arwidsson (Arwidsson 1977, 122–123), and recently German archaeologist Egon Wamers (Wamers 2009, 25–42) argued that the bear-fettering and bear-killing motifs from Torslunda may be influenced by depictions of bear hunts and bear fights in Roman amphitheatres, where bears were actually killed with weapons, fettered and kept on leashes.[6] Impressive images of bear fettering and bear fighting can be seen in, for instance, the 6th-century Byzantine mosaics from Kissoufim in Israel and Umm-al-Rasas in Jordan, as well as on the Mediterranean bronze pan from a Merovingian burial in the *Reihengräberfeld* of Güttingen, Kt. Thurgau, Switzerland (Figs. 14–16), to name just a few examples (Wamers 2009, fig. 33.2; Schmauder 2000, fig. 7; Garscha 1933; for more parallels see Oehrl 2013, 308–309). Wamers also considers depictions of the *damnatio ad bestias*, the killing of Christians by wild animals in the arena, as possible iconographic models.

Whatever the foreign models of the Torslunda images might have been, hunting, fighting, killing and capturing a bear must have been regarded as an extraordinarily heroic deed (Oehrl 2013), and thus it makes sense to place it on a warrior chieftain's helmet. Heroes fighting bears are often mentioned in medieval written sources (ibid. 298–310; Ranke/Reichstein 1976), in the Middle High German *Nibelungenlied* (stanzas 939, 962: Grosse 1999, 286–287, 292–293; see also Obermaier, this volume), in several Icelandic sagas, and in the heroic Edda poem *Helgakviða Hundingsbana ǫnnor* (stanza 8: Neckel/Kuhn 1983, 152). In this poem, the hero Helgi is asked by his wife Sigrun where he fought. Helgi answers that he fed eagles with weapons and took, i.e. captured, bears in Bragalund (*er ec biorno tók í Bragalundi / oc ætt ara oddom saddac*). "Feeding eagles" is a poetic phrase (*kenning*) and means "to slay enemies in battle" (see e.g. Jesch 2002). The kenning "taking/capturing bears" is to be understood in the same way, as a poetic code meaning "to defeat enemies heroically" (Beck 1964, 45–50; 1970). Even if these written records are much younger than the Torslunda dies, they can give us an impression of the significance of the bear motif in Germanic heroic tradition. The images may actually refer to those poetic metaphors (ibid.).

On another bronze die from Torslunda (die D) and several other Scandinavian, Anglo-Saxon and Alamannic artefacts from the Merovingian Period, warriors with animal heads can be seen, probably

5 For the relevant photos and drawings of the material see Hauck 1978, pl. VIII, 10a–c, 11–14; Böhner 1991, figs. 18, 19. See also Helmbrecht 2011, 104 fig. 11b, d, e, cat. nos. 592, 1090, 1101. Regarding the numerous previous interpretations of the fettering and bear fighting motifs: ibid., 102–106; Oehrl 2011, 172–175; 2019a, 131–136.

6 On show hunts and animal fights in the Roman amphitheaters, in which bears were often included, see e.g. Keller 1909, 178–179; Toynbee 1983, 84–90; Hughes 2007, 66–68; Pastoureau 2008, 55–56. See also Hurka, this volume.

masked men, dressed up as beasts of prey, most probably as wolves (Figs. 17–19). These depictions are commonly – and quite convincingly – interpreted as *úlfheðnar* (most recently Samson 2020, 252–264), warriors mentioned in early Skaldic poetry who, according to Snorri Sturlusson's *Ynglinga saga* (ch. 6; Bjarni Aðalbjarnarson 1941, 17), are closely linked to the chief god, Óðinn. The god himself, with horned headgear, seems to accompany the warrior with the wolf mask on the Torslunda die (in particular Beck 1968, 247–249; Hauck 1994, 218, 220–222; most recently Oehrl 2017; 2019a, 230–242). These figures represent wolf warriors, rather than bear warriors.[7] Nevertheless, they should be introduced here, because I want to present a previously unknown recent find from England, which is comparable to the Torslunda motif, depicting the horned warrior (i.e. Óðinn), together with a bear – not a human warrior with an animal mask, but a real bear, standing on its hind legs (Fig. 20). This bronze figural application is 31 mm high and has two application lugs on its flat backside. It was offered at TimeLine Auctions with only the information that it is in "very fine condition" and "professionally cleaned and conserved" and, concerning the provenance, it was stated: "Property of a professional collector, acquired before 1990". The piece was sold on the 28th of November 2018 for 500 British pounds. Unfortunately, there is currently no way of checking whether this figure is authentic or not.

Further relevant Vendel Period depictions are the bronze bear figurines placed on the socket of a spearhead from grave 12 in the burial ground of Vendel (Stolpe/Arne 1927, pl. 34.5) and a similar but fragmented piece from By in Nord-Trøndelag, Norway (Petersen 1912; Gjessing 1934, 54–55 fig. 54; see Figs. 21–22).[8] The latter represents a single find, while the Vendel spear was found in a very richly furnished warrior's grave. The Vendel spearhead's blade is relatively broad and could therefore be regarded as a boar spear or a bear spear. Based on this, the small beast heads on Migration Period spears, probably hunting spears,[9] from Rheden in Gelderland, Netherlands, and Vermand in Aisne, France, can be regarded as bears as well (Böhme 1974, 101–102, pls. 65, 137; Beermann 2016, 65–66 fig. 50). In the light of these Migration and Vendel Period "spear bears", a group of animal-shaped sword and knife pommels from Uppland, Södermanland and Finland must be considered as well (Lamm/Rundkvist 2005; 2011; Beermann 2016, 66–67, fig. 51–53; see Figs. 23–26). Actually, most of them seem to depict beasts of prey; however, clear bear-like features cannot be observed. The sword pommel from Ed parish in Uppland, incidentally, originates from a 6th-century warrior's grave, which also contained bear claws, possibly originating from an entire bear skin.

The next group to be considered here are the so-called *guldgubbar* or gold foil figures,[10] which are very tiny (mostly between 1 and 2 cm²) paper-thin gold foils with stamped images of human figures or, forming a relatively small sub group, individually produced figures cut out of gold foil. There are more than 3,000 gold foil figures known today, most probably dating to the Vendel Period, all of them found in Scandinavia, usually at so-called central places, i.e. settlements of political, economic and cultic significance and seats of rulership, such as Helgö and Uppåkra in Sweden, Sorte Muld on Bornholm and Gudme in Funen, Denmark, and Borg in Lofoten, Norway. Many of the gold foil

7 On the 9th century Oseberg tapestry, several warriors with animal masks can be seen, such as boars, birds and other beasts (Vedeler 2019) – a bear warrior, however, cannot be identified with certainty. Regarding the Old Norse bear warriors (*berserkir*), see Sundqvist, this volume.

8 Böhner 1991, 697 fig. 13; Lamm/Rundkvist 2005, 110 fig. 8–9; Oehrl 2013, 312 fig. 32; Beermann 2016, 65 fig. 49.

9 The protruding animal heads on the weapons' socket may form a kind of guard (or "stopper"). This "guard" and the broad shape of the blade make these weapons comparable to boar spears and bear spears known from medieval and modern times.

10 In 2017, the gold foil figure phenomenon was discussed in the course of an international and interdisciplinary workshop at the ZBSA in Schleswig, the conference papers of which represent the most extensive and up-to-date publication on the topic so far: Pesch/Helmbrecht 2019. See also the papers by K. Hauck and M. Watt in Hauck 1992, which are still considered essential. The main monograph and edition of the material by M. Watt, which has long been announced, is still in preparation.

figures were found in hoards, in connection with great hall complexes. Most likely, these gold foils were used as sacrificial offerings, probably as a kind of cultic currency or temple money, similar to figuratively decorated votive plaques and figurines known from temples of the Roman Empire and its provinces (Watt 1992, 221–224; 1999, 138–140; Hauck 1993, 411–421; 1998, 318–320; Lamm 2004, 130).

A very small group of figures are individually cut-out animals (Watt 1992, 218–219 fig. 11a–e), which possibly represent animal sacrifices (Oehrl 2019b, 401–402). One of them, found in Sorte Muld, can be identified as a boar because of its curled tail, its bristle crest, and its tusks (Watt 1992, 218; Fig. 27). A further animal figure from Sorte Muld has very similar body proportions; however, the typical boar features are completely missing, so it should actually be regarded as the depiction of a bear, as already stated by Watt (ibid.; see Fig. 28). The same is true, in my and Watt's opinion, in the case of a newly discovered, previously unpublished gold foil figure from the settlement of Smørenge on Bornholm, a metal detector find from 2006 (Fig. 29).[11] The shape and proportions of the body, the massive head with small rounded ears resemble a bear, while typical boar-like features are missing.

There is another relevant recent find I would like to present here – a stamp for producing gold foil figures found in Bjerringbro in Jutland, Denmark, a metal detector find from April 2018 (Mortensen 2018; see Fig. 30).[12] The bronze stamp is 1.5 cm wide and 1.8 cm high, and it represents, strangely enough, the same sitting and fettered beast, probably a stylised bear, who is depicted on the Vendel Period helmet plaques (Figs. 10–13). The gold foil stamp is corroded and worn, but the crucial elements can be observed – the sitting body posture, the outstretched and apparently crossed arms and long claws, as well as the longish snout.

On Late Vendel and Viking Period Gotland, there is a special type of brooches of the female costume, called "animal head brooches" (Carlsson 1983), which have been brought into play and considered as representations of bears as well. As a matter of fact, many of these brooches are reminiscent of boar or rather bear heads (Beermann 2016, 63–64 fig. 45); with some imagination, a massive forehead with small rounded ears, a longish snout, sometimes with nostrils, and a pair of eyes can be observed (Fig. 31). However, whether all of these brooches were actually intended to represent bears, another beast or anything else remains unclear. In a considerable number of cases this interpretation seems at least conceivable. Even if this type of brooch was not intended to represent bear heads right from the beginning (as its form clearly derives from the shape of crossbow fibulae, which have nothing to do with animal heads), it is, in my opinion, hard to imagine that the Viking Age Gotlanders did not associate their characteristic form with certain animals at all. However, this must of course remain unproved.

From the Early Viking Period, an exceptional item from Klinta on Öland must be mentioned – an iron staff of at least 82 cm in length with a basket-like end, consisting of four rods and crowned by a bronze miniature of a house (Fig. 32).[13] There are 37 iron staffs of this kind known from Viking Scandinavia, and they have been interpreted in different ways – as sceptres, weapons, roasting spits, musical instruments, lamps, but commonly as magic staffs (Gardeła 2016). The staff from Klinta was found in a very complex female cremation grave, which contained a large amount of grave goods, including such remarkable items as copper sheets with runic inscriptions, Thor's hammer amulets, the remains of a horse harness, and bear claws, possibly originating from an entire bear skin (ibid., 342–343). The top of the basket-like element is decorated with four animal heads, one at each side, which very much resemble the heads of bears.

11 I would like to warmly thank Margrethe Watt for this information and the photos as well as for the permission to publish the find in the current volume.

12 My thanks go to Rasmus Birch Iversen, who provided me with information about the find and photos.

13 Further thanks go to Leszek Gardeła, who provided me with pictures of the item.

I would also like to mention the silver ear spoon from the 9th century grave no. 507 in the burial ground at Birka (Arbman 1940, pl. 173.lb; Holmqvist 1960, 113 fig. 19; Helmbrecht 2011, cat. no. 525 fig. 23j), depicting a woman with a drinking horn on one side of the handle, and an upright-standing beast with outstretched paws on the other side (Fig. 33). The fact that this beast is standing on its hindlegs could indicate the depiction of a bear. However, the animal has a long tail, which is more suited to a dog or a wolf. It is difficult to decide whether a bear or a wolf is depicted – or something in between.

Furthermore, there are two Early Viking Period brooches kept at the Archaeological Museum in Stavanger, Norway, which deserve to be called "bear brooches" (Kristoffersen 2014, 32–37). The oval brooch from Friestad in Rogaland was found in 1898, its context is unknown (Fig. 34a). The brooch is made of gilded bronze with inlaid silver. On both long sides of the brooch, a massive bear-like head with small rounded ears protrudes, flanked by a pair of broad paws, which seemingly belong to the animal (Fig. 34b). The second bear brooch from Stavanger is an equal-armed brooch from Ragje in Rogaland, which was found in 1935 during work on cultivated land, probably near a large mound (Fig. 35a). The brooch is made of gilded bronze and features four small figurines clearly depicting a teddy bear-like creature, hugging itself (Fig. 35b) – which is a typical feature in the Early Viking gripping beast style, to which this same brooch belongs. Such brooches were part of the female costume.

There are at least two further Norwegian gripping beast figurines, which in my opinion are intended to represent bears, both single finds without a find context – a bear-like beast made of amber that is gripping its own neck and feet from a farmstead in Råde, Østfold (Fig. 36), and a pair of two bears gripping each other, which are made of jet (so-called "black amber") and were found somewhere on the shore of Tresfjord in Vestnes, Møre og Romsdal (Fig. 37).[14] There is no information about the original contexts and function of these figurines available; however, they are quite tiny, only a few centimetres, so they could have been used as pendants. The gripping beast from Råde is kept in the University Museum Oslo, and the Vestnes bears in Bergen.

Based on these finds from Ragje, Råde, and Vestnes, which represent individual three-dimensional gripping beasts (which could be subsumed under the term "naturalistic sculptural gripping beast style"), it may be concluded that the frequently-depicted (two-dimensional) animals in the Viking Period gripping beast styles must be regarded as bears in general, instead of cats or lions as has so far been suggested (Steuer 1994). In this case, the bear would represent one of the most frequently represented animals in Viking Period art. The connection between the Viking gripping beast motif and the bear might also be seen in the fact that the animal head brooches from Gotland (see above) are frequently decorated in the gripping beast style. Are they representing bear heads decorated with "gripping bears"? There are even more three-dimensional gripping beasts to be mentioned: In 2004, a pair of exceptional gilded copper-alloy oval brooches with silver inlay was found in Finglas, northwest of Dublin, in a richly furnished 9th-century female grave (Sikora 2010; Fig. 38). These Scandinavian brooches are decorated with gripping beast-style elements and feature four protruding bear figurines, sitting and with outstretched gripping paws, as well as four beautiful big bear heads.[15]

There are more monuments from the Viking settlement area on the British Isles to be considered, in particular a special Scandinavian type of tombstone, the so-called hogbacks (Bailey 1980, 85–100; Lang 1984) already mentioned above. The common term for these monuments, referring to their longish and convex shape, is misleading – actually, the stones imitate the shape of Scandinavian long houses or hall buildings; sometimes even the roof with wooden shingles and other constructional

14 These figures are often depicted in publications on Viking Period art but have not been discussed in more detail so far (e.g. Graham-Campbell 1980, 104, 137; 2013, 69 fig. 68; Lindow 2001, 6).

15 I shall discuss what I call "naturalistic sculptural gripping beast style" and the connection between the Early Viking Period gripping beast styles and bear symbolism in more detail elsewhere.

details are depicted. In most cases, these stone houses are flanked by so-called end beasts, which clearly represent bears. The stones 17A from Brompton and 4A from Ingleby Arncliffe, both in North Yorkshire, are good examples (Figs. 39–40; cf. Lang 2001, pls. 82, 335). That a house-shaped tombstone refers to the idea of a house or hall of the dead is obvious; however, the meaning of the bear-shaped end-beasts is difficult to determine. Do they protect the building as a kind of apotropaic element? Interestingly, some of the bears are wearing a muzzle, which appears to characterise them as captured and more or less tamed and harmless. Ultimately, the Early Viking Period hogback end-beasts can be regarded as three-dimensional gripping beasts and should thus be ascribed to the "naturalistic sculptural gripping beast style" as well (see above).

Concerning the muzzle, there is a conclusive parallel depicted on the famous Bayeux tapestry dating to the late 11th century (Fig. 41); a man with sword and shield is attacking a bear who is fettered to a tree, wearing a muzzle (Wilson 1985, 12). Man-beast combat performances and bear-baiting blood sport events were quite popular during the Middle Ages and were practised in England from Anglo-Saxon times onwards, specifically connected with royal courts (see O'Regan, this volume; Strutt 1801, 204–207; Bartlett 2000, 669–670; Brunner 2005, 73–76; 2010, 139–141; Kiser 2007, 117–118; Pastoureau 2008, 211–212; Oehrl 2013, 309). The bear was chained to a pole, often handicapped by having been blinded or having had its claws cut off, and a pack of dogs was set on it (Fig. 42). Man-bear combats and bear baiting are also mentioned in Old Norse saga literature (Oehrl 2013, 309). This blood sport (as well as bear dancing performances) might be the background of the hogback end-beasts wearing muzzles, indicating a tamed bear used for an aristocratic pastime – performed in the ruler's hall that is represented by the tombstone itself.

There are two extraordinarily interesting but very strange belt buckles from England that should also be mentioned at this point. These are (or have been) available on the internet, one on TimeLine Auctions (Fig. 43) and the other one on the UK Detector Finds Database (Fig. 44a–b). The rectangular plate of these bronze buckles is formed by a bear seen from a bird's-eye view, with outstretched paws grasping the bar of the D-shaped frame. The plate and frame are made in one piece. In addition, there is a pair of wings on the bear's neck. According to the two mentioned websites, the buckles date to the Viking Age. However, there are no dateable parallels known so far. The hogback end-beasts could be mentioned as remotely similar comparative material. Remarkably, the English "buckle bear" is *gripping* the bar of the buckle's frame. As a matter of fact, there are several belt buckles decorated in the gripping beast style known from Scandinavian find spots, some of which depict small hands gripping the buckle's frame (e.g. Arbman 1940, pls. 86.2, 87.2, 87.5). However, these parallels are not yet fully convincing, and in any case the naturalism and the entire conception of the English buckles are without direct comparison. Possibly, however, they have to be assigned to the "naturalistic three-dimensional gripping beast style" characterised above.

Another depiction of a bear from the British Isles can be found on a Viking stone cross from the Isle of Man. The Manx Crosses were made by Scandinavian settlers, combining elements of indigenous insular and Viking traditions. The runic cross from Kirk Andreas (no. 103) depicts an elaborate hunting scene, consisting of a horseman and a dog chasing a red deer, as well as a procession of further wild animals, including a bear (Fig. 45a–b; cf. Kermode 1994, 194–195 fig. 38.9 pl. LIII; Wilson 2018, 75–77 fig. 30).[16] The bear also occurs among the frequent hunting scenes depicted on the 8th/9th-century Pictish carved stone slabs of Scotland, which are of a similar design to the Manx Crosses, featuring a central cross symbol and plenty of animals arranged around it (Fig. 46; cf. Allen 1903, 235–239 fig. 250B; Fraser 2008, cat. no. 67.1).

16 The runic inscription on the slab's narrow side reads as follows: *Sandulf the black erected this cross to the memory of his wife Arinbjörg.*

Surprisingly enough, as far as I can see, there are no striking depictions of bears from the Late Viking Age to be presented. The only relevant figures that I know of are some small and very simple, not to say primitive, quadrupeds on a handful of Upplandic rune stones (in particular U 241, 860, 969). As a matter of fact, the body proportions and short tail seem bear-like; however, the figures are not very detailed and are difficult to interpret (Figs. 47–49). However that may be, these beasts are depicted as elements of a Christian imagery, as the sign of the cross on the top of the stones appears to indicate. In the case of the Måsta stone (Balingsta sn), the "bear" belongs to a group of animals eating from the cross, i.e. the *arbor vitae* (cf. U 1140).

To sum up: This paper constitutes a survey of bear depictions from Sweden, Norway, and Denmark, as well as Scandinavian-influenced parts of England, including certain or almost certain bear depictions, probable bear depictions and also a group of possible depictions that are not verifiably bears. Chronologically, the relevant material ranges from the Roman Iron Age (i.e. the soap stone figurine from Modvo, Norway, sometime between the 1st and 4th centuries) to the Late Viking Age (11th century); however, most of it by far dates to the Merovingian/Vendel Period and the Early Viking Age (6th–9th/10th centuries). The images occur in quite different contexts, on different objects, bearing different possible meanings – military and heroic contexts, commemoration and sepulchral contexts, female jewellery, figurines or pendants (amulets?), and more. My main conclusion is: The bear is definitively not "non-existing" in Late Iron Age and Viking art, though it is not very frequent and is hard to identify with certainty. However, there is a respectable amount of probable and more or less certain bear depictions to be considered. The number of clearly identifiable depictions of wolves and boars in Late Iron Age art, for instance, is not very much higher. The major problem remains that the bear has almost no crucial physical features that are suitable for indicating pictorial representations clearly and unambiguously – unlike red deer, raptors, and boars, which are often clearly marked by antlers, a hooked beak, or tusks and a bristle crest, respectively. The limited possibilities of zoological identification are a main problem of Germanic pictorial art and animal style in general, which does not necessarily indicate the lack of a certain species but rather a lack of clarity and naturalism, which is typical for this kind of imagery – and probably a lack of understanding of this playful, and sometimes primitive and alien-like style of art.

Postscriptum

Through the kind help of Peter Pentz, National Museum Copenhagen, Denmark, for which I would like to express my sincere thanks, another find from Denmark came to my attention after the completion of the manuscript. A recent detector find from Herringe sogn, Sallinge Herred, Svendborg Amt (South Fyn; Fig. 50) represents the same bound beast that is also depicted on the plate from Torslunda (Fig. 10), the foils from Vendel (Fig. 11–13), and the small patrice from Borre Vestergård (Fig. 30). It is a rectangular pendant with two small eyelets for hanging at each of the top edges. The rectangular plate has a frame around a recessed area with an embossed, furry animal figure with four pairs of twisted legs ending in long curved claws. The inlay is made of silver.

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Fig. 1. Figurine made of soapstone from Modvo in Sogn og Fjordane, Norway; Roman Iron Age (© Universitetsmuseet i Bergen, B11436, Norway).



Fig. 2. Gilded silver relief brooch from Hol in Sør-Trøndelag, Norway; Migration Period (© NTNU Vitenskapsmuseet, T9822, Trondheim, Norway; photo K. Dahl, VM).



Fig. 3. Wooden piece of unknown function from Evebø in Sogn og Fjordane, Norway; Migration Period (© Universitetsmuseet i Bergen, B 4590, Norway; photo S. Skare).



Fig. 4. Bronze die A from Torslunda on the isle of Öland, Sweden; Vendel Period (© Statens historiska museer, Stockholm, Sweden).

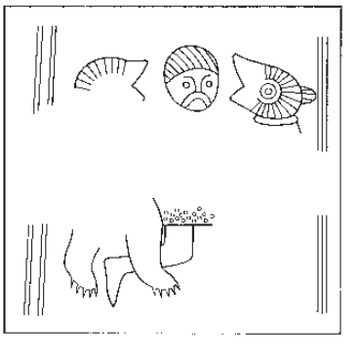


*Fig. 5. Bronze foil (*Pressblech*) fragment from Valsgärde in Uppland, Sweden; Vendel Period (after Arwidsson 1977, fig. 142).*



Fig. 6. Silver phalera from Eschwege in Hessen, Germany; Merovingian Period (© Museumslandschaft Hessen Kassel, Sammlung für Vor- und Frühgeschichte).



Fig. 7. Belt buckle from unknown find spot in Spain; Merovingian Period (after Oxenstierna 1956, fig. 156).



Fig. 8. Disc brooch from Sprendlingen in Rheinland-Pfalz, Germany; Merovingian Period (after Lindenschmit 1870, Heft VII, Tafel 6.1; cf. also Klein-Pfeuffer 1993, no. 293).



Fig. 9. Gold and garnet cloisonné mounts on the purse lid from the Sutton Hoo ship burial in East Anglia, England; Vendel Period (graphically reworked by M. Bolte, ZBSA).



Fig. 10. Bronze die B from Torslunda on the isle of Öland, Sweden; Vendel Period (© Statens historiska museer, Stockholm, Sweden).



*Fig. 11. Bronze foil (*Pressblech*) from Vendel I, Uppland, Sweden; Vendel Period (after* Stolpe/Arne *1927, pl. VI.2).*



*Fig. 12. Bronze foil (*Pressblech*) from Vendel I, Uppland, Sweden; Vendel Period (after* Hauck *1978, pl. 9.12).*



*Fig. 13. Bronze foil (*Pressblech*) from Vendel XI, Uppland, Sweden; Vendel Period (after* Hauck *1978, pl. 8.10a).*



Fig. 14. Byzantine mosaic from Umm-al-Rasas, Jordan; 6th century (after Piccirillo *1993, fig. 389; © The American Center of Research [ACOR], Amman, Jordan).*



Fig. 15. Byzantine mosaic from Kissoufim, Israel; 6th century (© The Israel Museum, Jerusalem / Bridgeman Images).



Fig. 16. Mediterranean bronze pan from a burial in the Reihengräberfeld *of Güttingen, Kt. Thurgau, Switzerland; Merovingian Period (after* Garscha *1933).*



Fig. 17. Bronze die D from Torslunda on the isle of Öland, Sweden; Vendel Period (© Statens historiska museer, Stockholm, Sweden).

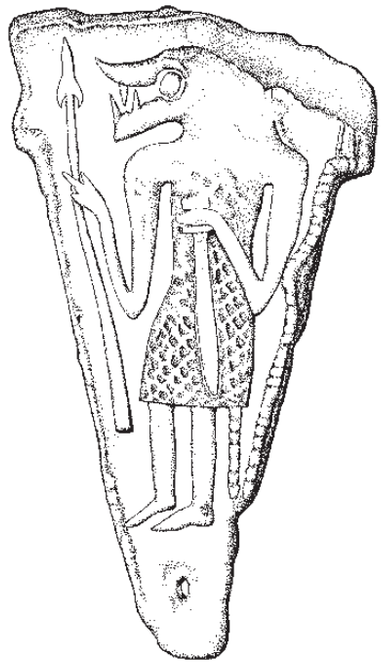


*Fig. 18. Bronze foil (*Pressblech*) die (?) from Fen Drayton in Cambridgeshire, England; Vendel Period (after* Pollington *et al. 2010, fig. 8.56).*



Fig. 19. Scabbard mount from Gutenstein in Baden-Württemberg, Germany; Merovingian Period (after Hauck *1957, pl. III.5).*



Fig. 20. Bronze application from unknown find spot, England; Vendel Period (?). As the only available image from the internet was unsuitable for a reproduction, a drawing had to be made. The image is not online any longer, but can be made available by the author (drawing A. C. Lange, after a template).

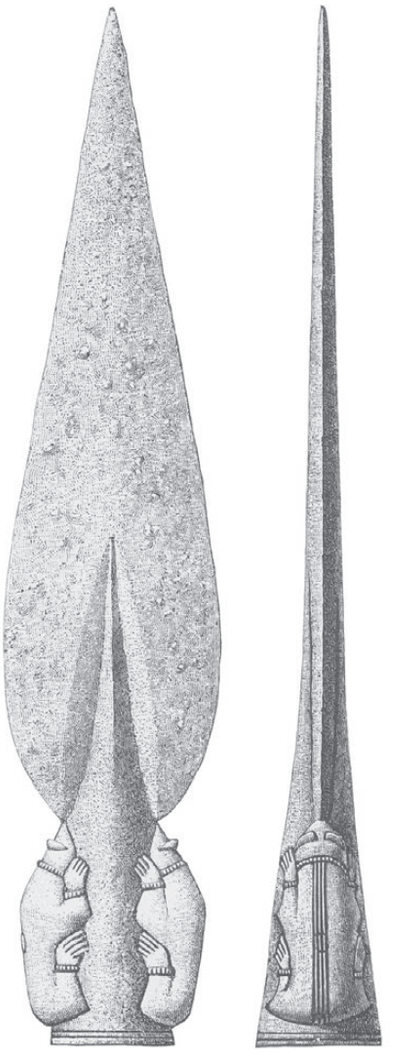


Fig. 21. Spear head with bear figurines from Vendel grave 12, Uppland, Sweden; Vendel Period (after Böhner 1991, fig. 13).

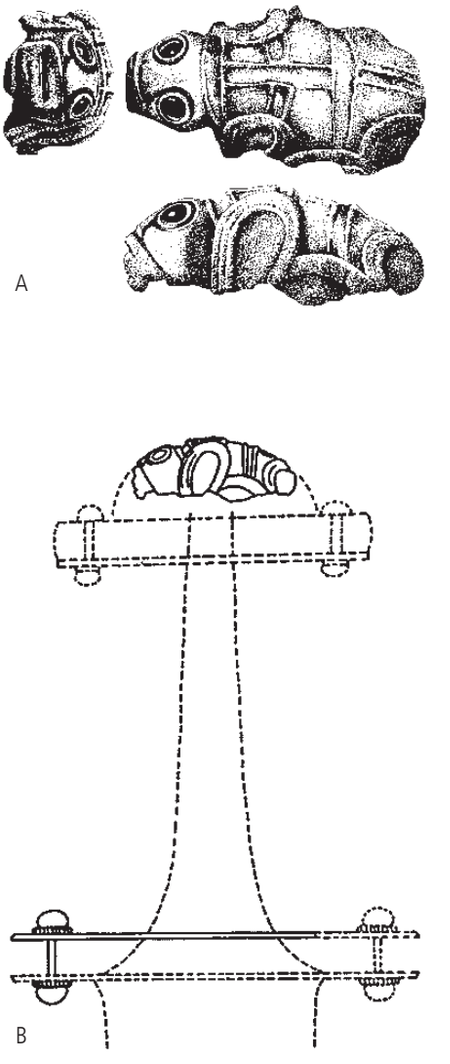


Fig. 23a–b. Sword pommel from Ed in Uppland (prästgården), Sweden; Vendel Period (after Lamm/Rundkvist 2005, figs. 2–3.



Fig. 22. Spear head with bear figurine from By in Nord-Trøndelag, Norway; Vendel Period (© NTNU Vitenskapsmuseet, T1269, Trondheim, Norway; photo O. B. Pedersen, VM).



Fig. 24. Sword pommel from Birkaland in Vesilahti (Kirmukarmu), Finland; Vendel Period (after Lamm/Rundkvist *2005, fig. 4).*



Fig. 25. Sword pommel from Husby, Trosa-Vagnhärad, in Södermanland, Sweden; Vendel Period (after Lamm/Rundkvist *2005, fig. 7).*



Fig. 26. Sword pommel from Vörå in Österbotten (Gulldynt), Finland; Vendel Period (after Lamm/Rundkvist *2005, fig. 5).*

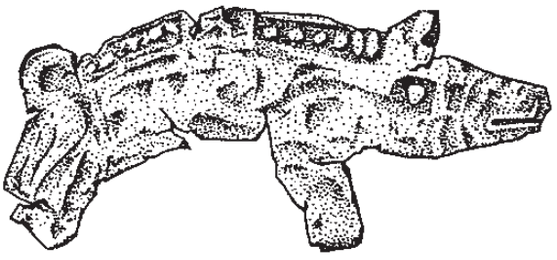


Fig. 27. Gold foil figure from Sorte Muld in Bornholm, Denmark; Vendel Period (?) (after Watt 1992, fig. 11c).

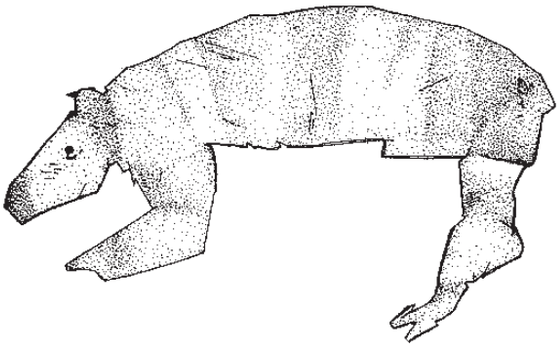


Fig. 28. Gold foil figure from Sorte Muld in Bornholm, Denmark; Vendel Period (?) (after Watt 1992, fig. 11d).



Fig. 29. Gold foil figure from Smørenge in Bornholm, Denmark; Vendel Period (?) (© Bornholms Museum, Denmark; photo R. Laursen).



Fig. 30. Patrice? for producing gold foil figures from Borre Vestergård, Bjerringbro, Denmark; Vendel Period (?) (© Moesgård Museum, Denmark).



Fig. 31. Early Gotlandic animal-head brooches; Vendel Period (© Statens historiska museer, Stockholm, Sweden, inv. no. 7157).

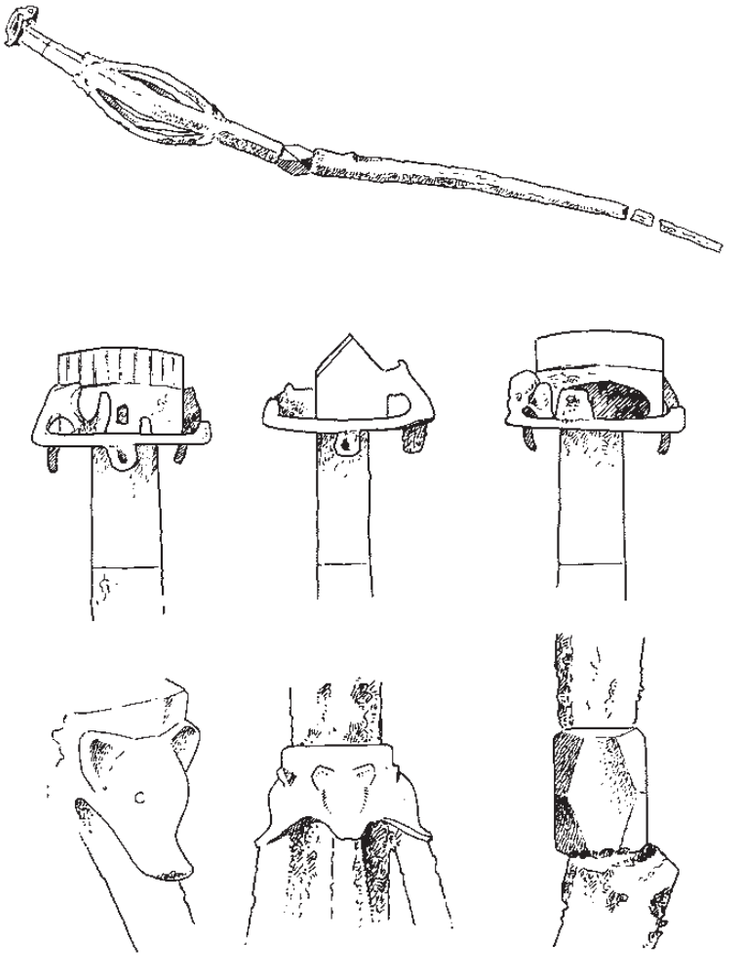


Fig. 32. Iron staff from Klinta, Öland, Sweden; Early Viking Age (© Statens historiska museer, Stockholm, Sweden, object 107776, inv. no. 25840).



Fig. 33. Ear spoon from Birka grave 507, Stockholm, Uppland, Sweden; Early Viking Age (after Arbman *1940, pl. 170.1).*



Fig. 34a–b. Oval brooch from Friestad in Rogaland, Norway; Early Viking Age (© Arkeologisk Museum Stavanger, Norway, inv. no. S2095; photo T. Tveit).



Fig. 35a–b. Equal-armed brooch from Ragje in Rogaland, Norway; Early Viking Age (© Arkeologisk Museum Stavanger, Norway, inv. no. S11240; photo T. Tveit [a], no information [b]).



Fig. 36. Amber figurine from Råde in Østfold, Norway; Early Viking Age (© Kulturhistorisk Museum Oslo, Norway, inv. no. C4033; photo E. I. Johnsen).



Fig. 37. Jet (black amber) figurine from Vestnes in Møre og Romsdal, Norway; Early Viking Age (© University Museum Bergen, Norway, inv. no. B290).





Fig. 38. Oval brooch with silver inlay from Finglas near Dublin, Ireland; Early Viking Age (© National Museum of Ireland).



Fig. 39. Hogback from Brompton (17A) in North Yorkshire, England; Early Viking Age (© Corpus of Anglo-Saxon Stone Sculpture; photo T. Middlemass).



Fig. 40. Hogback from Ingleby Arncliffe in North Yorkshire, England (4A); Early Viking Age (© Copyright Corpus of Anglo-Saxon Stone Sculpture; photo T. Middlemass).



Fig. 41. Bear-baiting scene on the Bayeux tapestry; late 11th century (© Musée de la Tapisserie, Bayeux, France / Bridgeman Images).



Fig. 42. Illumination from the Luttrell Psalter, British Library Add. 42130, fol. 161r; AD 1325–1335 (© British Library Board. All Rights Reserved / Bridgeman Images).



Fig. 43. Bronze buckle from unknown find spot, England; Viking Age (?). As the only available image from the internet was unsuitable for reproduction, a drawing had to be made. The image is not online any longer, but can be made available by the author (drawing A. C. Lange, after a template).

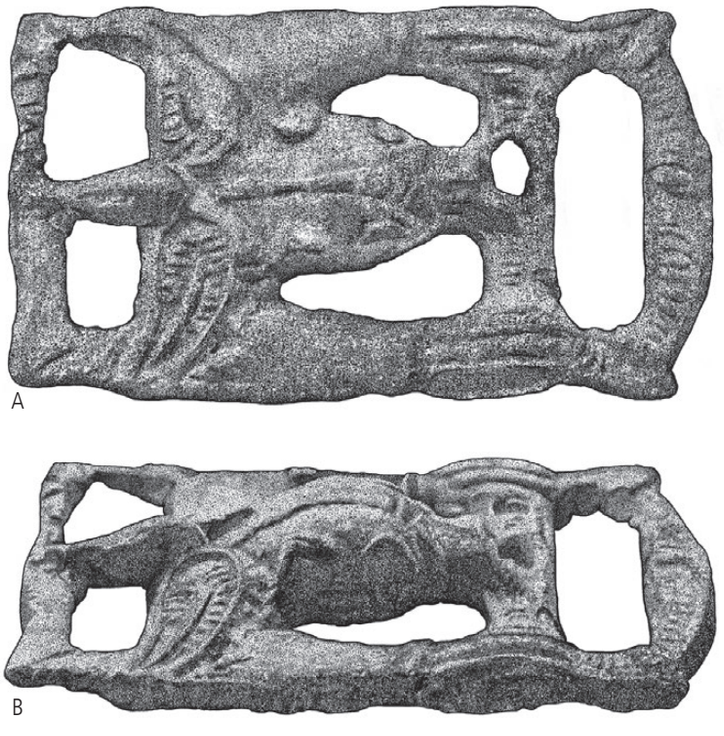


Fig. 44a–b. Bronze buckle from unknown find spot, England; Viking Age (?). As the only available image from the internet was unsuitable for reproduction, a drawing had to be made. The image is not online any longer, but can be made available by the author (drawing A. C. Lange, after a template).



Fig. 45a–b. Stone cross from Kirk Andreas on the Isle of Man; Early Viking Age (© Manx National Heritage / Bridgeman Images [a]; drawing by the author [b]).



Fig. 46. Pictish stone slab (Drosten stone) no. 1 from St. Vigeans in Angus parish, Scotland; 8th/9th centuries (© HES: Historical Environment Scotland).



Fig. 47. Rune stone from Lingsberg in Vallentuna sn, Uppland, Sweden; Late Viking Age (Upplands Runinskrifter [U] 241).



Fig. 48. Rune stone from Måsta in Balingsta sn, Uppland, Sweden; Late Viking Age (Upplands Runinskrifter [U] 860).



Fig. 49. Rune stone from Bolsta in Vaksala sn, Uppland, Sweden (Late Viking Age) (Upplands Runinskrifter [U] 969).



Fig. 50. Pendant (recently discovered detector find, see postscriptum) from Herringe sogn, Sallinge Herred, Svendborg Amt, Denmark; Vendel Period (?) (© National Museum Copenhagen, Denmark [NM C58867], photo A. Jæger Manøe Schäfler, license CC-BY-SA).

Bears in Swedish imagery, AD 1000–2000

By Åsa Ahrland and Gert Magnusson

Keywords: National landscapes, Sweden, bears, hunting, education, folk tales, symbols

*Abstract: The brown bear (*Ursus arctos arctos*) is the single largest predator in Europe. In Sweden, it is mainly found in forest areas in the northern part of the country – from the county of Dalarna in the south to the Lapland region in the north. Occasional bears occur outside the deep forests and can also be found in southern Sweden. The many narratives and wide range of imagery over time testify to the fascination and mixed emotions generations have felt for this animal. In this article, we will provide examples of how the bear has been perceived and depicted in Swedish imagery and the various themes that have arisen over the centuries. Our aim is not to be comprehensive, but to highlight some reoccurring and sometimes conflicting perceptions projected onto this animal. Bears have been a very real part of Swedish life throughout history, while at the same time evoking people's imaginations.*

The bear and the national landscape

Periodically, bear hunting in Sweden has been brutal. From medieval times and onwards, entire villages were obliged to participate in large battues (Swedish: *skalljakt, drevjakt*), where the bears were driven into lakes to be killed. As late as the 19th century, ten such hunts were carried out in Dalarna alone. Such hunting was also used for wolves, lynxes and wolverines with the aim of exterminating animals that were perceived as damaging and/or as dangerous predators. At times there was even a bounty paid for killing bears (see for instance Björklöf 2010, 121–125, 129–134, 146–157, 187–197; Nyrén 2012). One technique used by smaller groups of hunters was to attack the bears in winter during their hibernation. As we can see in Wilhelm Wallander's painting from 1858, this was not without its risks (Fig. 1). The image was one in a series of 24 paintings created, according to the publisher Albert Bonnier, in order to "collect the more and more disappearing most characteristic idiosyncrasies and customs of Swedish folk life, and at the same time show the people's national costumes, which are also increasingly beginning to disappear" (Wallander/Wetterbergh 1864/1865, back cover [authors' translation]). Bonnier had commissioned them for *Svenska Folket, sådant det ännu lefver vid elfvom, på berg och i dalom* (The Swedish people, as they still live, by rivers, on mountains and in valleys), published in 1864–1865 (Wallander/Wetterbergh 1864/1865).[1] Encounters between humans and bears in a more humorous way are related in an album from *c.* 1859, in which the artist Fritz von Dardel (1817–1901), by using drawings, tells a story about two English travellers. The album reflects the interest of foreign well-to-do 19th-century tourists in the wider Scandinavian

1 https://digitaltmuseum.se/011023447969/tavla (accessed 20.07.2021).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 991–1014 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134375

landscape, particularly the mountains and forests where fishing and hunting could be pursued (Fig. 2; cf. Garnert/Rundquist 1991; Von Dardel 1991). Towards the end of the century, the goal of exterminating the bear had almost been achieved. The risk was imminent that the bear would become extinct in Sweden. However, the understanding of nature and the relationship between humans and the wilderness with its animals and plants was by then changing among a learned élite as well as among larger groups of the Swedish population. There was a growing interest in what was perceived as typical Swedish nature and a sense of urgency to protect its specific landscape features, habitats, animals and plants. The Romantic movement with its emphasis on the close bond between man and nature, in particular untouched nature, was an important influence. In the eyes of the Romantics, nature was seen as dynamic and animated with a strong correlation between the micro- and macrocosmos. The movement was not only a major leverage in the arts, but affected many other areas such as education, as well as the social and natural sciences (Ödman et al. 1982, 92, 188, 198; Johannison 1984, 21–22, 32–33, 52–55, 70–72).

As in many Western countries, the protection of nature formed part of a larger nation-building process (Sörlin 1988, 107–110; Mels 2022, 138–139). Since the 1880s, Sweden had experienced major socio-economic changes following industrialisation and rural mechanisation. Though urbanisation was slower than in many other European countries, the urban population doubled in 1870–1900, and one million Swedes emigrated to the United States. In addition, the union with Norway ended in 1905 (Eskilsson 2008, 368). There was a political need to identify Swedish self-identity in an unstable social situation and to find symbols that would unify the people. The love of nature and the scientific knowledge of nature proved to be strong unifying symbols (Ödman et al. 1982, 154; compare to Löfgren 1979, 45–69; 1992, 150–157; 1993, 51–52; Sörlin 1988, 82–92, 100–109; 1992). Schools, books, journals and new institutions, such as museums, were important vehicles to convey the Swedish identity. In Stockholm, Skansen, the world's first open-air museum was founded in 1891. Interlinked was the nearby Nordiska museet, devoted to Nordic cultural history, which was inaugurated in 1907. The liberal politician and botanist Karl Starbäck's remark that nature conservation would result in "the creation of a large national outdoor museum" in 1915 shows that the museum idea was also relevant in relation to landscapes (Starbäck 1915, 33 [authors' translation]). Starbäck submitted a proposal to the Swedish Parliament in 1904 for a new legislation on the protection of areas of wilderness and was a member of the working group that was suggesting park areas (Mels 2002, 139–140). As the first country in Europe to do so, Sweden designated nine national parks in 1909. These were mainly monumental landscapes in the north and thus well suited for the formation of a national identity.

Sonfjället, a part of the mountain range in the county of Härjedalen, was included in this first group. Important considerations for the protection of the area were the somewhat unspoilt lichen heaths, a small and rare group of wild reindeer and the claim that bears had lived in the area since time immemorial (Bergström et al. 1990). In 1989, the park was expanded from its original 27 to 104 km^2 (10,400 hectares). Today, Sonfjället National park is coined "bear country" on its official web page, as "the mountain and surrounding forests are known as one of the most important bear refuges in Scandinavia".[2] The area also hosts a large elk population, lynxes, and occasionally wolves, wolverines and musk oxen. Common bird species are heather piper, mountain piper, willow ptarmigan and ptarmigan, as well as buzzards, ospreys and golden eagles. All these species are associated with, and in a sense define, the wilderness in northern Sweden.

2 Sveriges nationalparker, https://www.sverigesnationalparker.se/en/choose-park---list/sonfjallet-national-park/ (accessed 26.05.2022).

Fights between man and bear

Encounters between bears and humans are relatively uncommon. The bear often discovers the human being before he or she is at risk of coming in close proximity, or is even aware of the animal. A compelling example is that of a local woman in Ängersjö village in Härjedalen, who in the 1990s was out alone picking berries in a clearing in the woods, unaware of being surrounded by five bears among the trees. The incident was observed from a helicopter, which unsuccessfully tried to scare the bears off. The berry picker thought the helicopter behaved strangely, but never discovered the bears. Confrontations between bear and human are usually provoked by hunters and their dogs. The encounter is often described in dramatic terms as a duel between the hunter and the bear. This ties in with a long tradition of narratives and illustrations in which the bear is presented as a fighter with whom a grown man has to measure himself. This was also valid for royalty. Though a keen hunter of animals such as elks, wolves, foxes and grouse, King Charles XI (1655–1697) preferred the thrill of bear hunts. According to his own notes, his hunting team killed 27 bears during the period 1681–1697.

One of these hunts took place in January 1681 at the Sickelsjö estate outside Arboga in the county of Närke. The king's short note in his diary does not reflect the drama of the hunt: "The 20th to Sikelsjö for bear hunting" (Karl XI 1808, 72 [authors' translation]). Other accounts of the event relate how the king met a large and strong bear, whom he tried to shoot, but only wounded and angered. The animal got up on his hind legs and to everybody's horror was about to knock the king over, when two hunting dogs ran forward and attacked the bear. Whether the king himself subsequently managed to kill the bear or if somebody else did is somewhat unclear. In the tribute poems written about the event, the king was described as a hero. The 200-kg-bear was stuffed and depicted in a large painting by the court painter David Klöcker Ehrenstrahl (1628–1698; see Fig. 3). The future Charles XII (1682–1718) was, like his father, an enthusiastic hunter all his life and had already participated in many hunts as a child (Karl XII 1893, 30–32, 34, 214, 227). He killed his first bear at the age of eleven. His proud father wrote in his diary about the event in much more detail than the bear hunt in Sickelsjö: "His Royal Highness shot the bear on the right side by the neck, so that that the bullet went all the way through the heart and out on the left side again" (Karl XI 1808, 306 [authors' translation]; see Fig. 4).

In most images depicting a fight between man and bear, the latter is depicted standing on its hind legs opposite the opponent. The upright position humanises the large animal, but has at the same time been seen as a sign of the animal's hostility. However, standing up could simply be a means for the bear to get a better view in certain situations. Bears' eyesight is not poor, probably the equivalent of that of a human being, but their smell and hearing are very well developed and are probably the senses they trust the most (Björklöf 2010, 83). The association with strength and sudden rage has made the bear a frequent motif in Swedish heraldry. There are, however, many more connotations of the bear in a Swedish context, which reflect the lasting fascination for this large furry animal, such as cleverness, wisdom and playfulness, all traits that humans have been able to identify with and admire.

The bear in folk tradition

Many Swedish folktales relate to a situation where a bear is deceived by a cunning and exasperating fox. Despite being the strongest of all animals and rather wise, the bear's strength is not sufficient in relation to the much smaller and weaker animal's ability to cheat (Sahlgren/Sahlgren 1981, 131–134).

Other stories take their point of departure from the fact that some humans can transform into a bear or a wolf, which in effect is a werewolf tradition. One such narrative is linked to Dödmansudden on Lake Håckren in the county of Jämtland. In 1691, a so-called *hamnbjörn*, a werebear, i.e. a shape-

shifter who can change between bear and human form, killed a farmer and his farm-worker. Interestingly, the evidence that secured its identity as a werebear were the belts and other parts of clothing that were found under the skin after the bear had been killed (Fig. 5). Men could also be transformed into bears by others. In one such story, a Sámi girl turned her unfaithful fiancé into a bear and tricked settlers into shooting the beast (Odstedt 1943, 96, 98–100).There are also folk tales around the bear's habit of entering a barn or a storehouse through a hole in the roof in order to provide himself with supplies, which he would then take away with him. In this case, it seems that the narrative sometimes refers to a *hamnbjörn,* sometimes to a real animal.

Another widely-spread tale appears in the works of the Danish historian Saxo Grammaticus (*c.* 1150 – *c.* 1220) and the Swedish archbishop and historian Olaus Magnus (1490–1557). This is a narrative of a bear who abducted a beautiful young girl and brought her to his hiding place but, instead of eating her, he was enraptured by her beauty and seduced her. In the end, the beast was hunted down and killed, but his blood lived on in their son, called Björn (Bear) after his father (Fig. 6). Björn's son was the Danish chieftain, Thorgil Sprakling, whose grandsons became kings of Denmark and England (Olaus Magnus 1976, 18:30). The notion that the qualities of the bear were transferred to the Viking Age Danish royal family might have a parallel in the appearance of bears in older Swedish heraldry. The bear is even more frequent in the folk tradition in Finland, which constituted the eastern part of the Swedish realm until 1809. This might partly be explained by the many references to the deep forests in the national epic, the Kalevala, compiled from old ballads, lyrical songs, and incantations that were a part of the Finnish oral tradition (Björklöf 2010, 254–267, 272–273, 379–380).

Towards the end of the 19th century, the image of the bear became increasingly "peaceful" in popular culture. One example is the children's song "Mors lilla Olle" (Mother's little Olle), published in 1895 in the song book *Sjung med oss, mamma!* (Sing with us, mother!), which to this day is sung by all Swedish children. It was written by Alice Tegnér (1864–1943), a music teacher, poet and the foremost composer of Swedish children's songs during the late 19th and the first half of the 20th century (Tegnér 1895; 1903). The song is about the little boy, Olle, who is out in the woods picking blueberries and feeling a little lonely. Suddenly he encounters a big brown bear, and he pats it and feeds it berries. When his mother comes screaming the bear runs off. Olle gets sad and wants mummy to call his new friend back. The story is inspired by a real event outside the village of Särsjön in Dalarna in 1850. The boy's name was Jon Ersson; he was one year and seven months old. Together with his older siblings, Jon was picking lingonberries a couple of hundred meters from home. He seems to have been on his own when he encountered a female bear with two cubs. Jon fed the little ones with lingonberry sprig and when tired he lay down to rest with the cubs at the bear crib. When his eldest sister discovered him, she fetched her mother, who scared the bears away. The song's immediate popularity is evident from the title of the song book *Mors lilla Olle och andra visor av A. T.* (Mother's little Olle and other songs by A. T.), published in 1903 (Fig. 7). The illustrations by the artist Elsa Beskow (1874–1953), one of the best-known Swedish authors of children's books, contributed to the book's status as an icon. The 2001 facsimile edition is described by the publishers as "one of the most famous and beloved in our children's literature". They also state that Alice Tegnér's lyrics and music with Elsa Beskow's images "have become part of our cultural heritage".[3] The motif also appeared in the textile *Barnkretong* (children's cretonne) created by the internationally renowned Swedish textile designer, Astrid Sampe (1909–2002; see Fig. 8). In this context, the work of the Swedish artist Jenny Nyström (1854–1946) must also be mentioned. Due to her husband's illness, she had to provide for the family, so, from the 1880s onwards, she illustrated books, journals, newspapers, calendars, and Christmas and Easter cards (Werkmäster 1996). Nyström is particularly known for her imagery in

3 https://www.rabensjogren.se/bok/9789129640458/mors-lilla-olle (accessed 06.02.2022).

children's books and magazines, which often feature friendly bears playing with children and helping them out (Fig. 9).

The bear in education

In 1842, the Elementary School Act/Statute on Common Schools (*1842 års folkskolestadga*) was issued in Sweden. The main purpose was to establish that every parish was obliged to set up and finance at least one school. It was not really introducing a compulsory school system that stated at what age the children would have to start, what they should learn and for how long they would go to school. To a large extent the population was already literate through homeschooling and the education the Church provided (Johansson 1972). The Act has been described as a "late official confirmation and legitimation of a practice developed throughout the country" (Petterson 1991, 27).

With time, the state exerted a stronger hold over education itself, in order to make it more uniform. Professional teachers, common textbooks and new subjects such as history, geography and science were introduced (Hultén 2008, 58–60). An important step in the process of controlling the content of the subjects was a national curriculum. The first curriculum, which appeared in 1878, specified for instance the 102 animals Swedish children should learn about. The brown bear was one of the beasts and remained on the list in the 1900 curriculum, despite the fact that the number of bears in the country had been reduced to 74, under the pretext that "only the most typical and most important to man" were to be included (Hultén 2008, 65). The rapid expansion within the natural sciences during the 19th century was reflected in the appearance of special textbooks in the field (Hultén 2008, 58–60). The books mainly focused on descriptions of animals, plants, stones and other objects, inventions and natural phenomena (Hultén 2008, 64). Thanks to new techniques in the mass production of images, access to visual material in schools increased radically during the 19th century. The fact that images became an important part of the pedagogy was based on the conviction that reality could really be captured in an image. While school posters do not seem to have become common until the turn of the 19th century, textbooks were illustrated early on. This applied not the least to those on natural science, where text and image were combined "to describe individual natural objects in more detail and to convey the most important images" as the author of *Folkskolans naturlära* (The natural science of the Elementary School) put it (Bäckman 1871 [authors' translation]; cf. Johannesson 1997, 15–17, 22–29, 144, 147–148; Hultén 2008, 74–76).

As mentioned, the period from the 1870s and onwards was a time of great change on many levels in Swedish society. The production of *Läsebok för Folkskolan* (The elementary School reading book) coincided with this period. The first edition appeared in 1868 as a response to the lack of a comprehensive textbook that covered the important subjects in school. It was initiated and financed by the state. Education was seen as a way to shape children's perception of the world (Edgren 2017, 95–103). *Läsebok för Folkskolan* proved to be a useful tool to move towards a more secular and modern school, where the individual and its relation to the state and the nation were more pronounced and qualities such as morality, discipline and patriotism would be at the core in order to create good citizens.[4] The elementary school could help to bind together and shape "The new Sweden".

With this in mind, let us look at the extensive description of the brown bear in the revised 1878 edition of *Läsebok för Folkskolan*, as it conveys what was considered to be important knowledge for a child at that time. In the text the bear is a "he", which gives the animal a human quality. Being suspicious and shy, he prefers remote and desolate forest areas in the north. He is also described as wild

4 Ch. Florin, Från folkskola till grundskola: http://www.lararnashistoria.se/2010, 8–10 (accessed 22.07.2022).

and angry by nature. He eats roots, juicy plants and berries such as blueberries and lingonberries. Together with ants, this constitutes a young bear's food. When older he gets a taste for meat and attacks horses and cattle. This is always done in an upright position in order to have his paws free. His strength is underlined. When attacking a strong horse, he grabs its shoulders with one paw and gallops next to the horse until he can grab a tree with the other paw and pull the horse to the ground. He can also carry a horse or a cow between his front paws (Läsebok för folkskolan 1878, 93–95). The impression that this is somebody we as humans can identify with in a way is shown in the following lines: "He swims fast and long distances and often takes a swim during hot summers. When he gets scared, he runs fast but clumsily. His external senses are very well developed: his eyesight is sharp, his hearing good and his sense of smell extremely fine, which is why he seldom meets people during his summer walks in the forests" (Läsebok för folkskolan 1878, 94 [authors' translation]). In the last paragraph, we recognise a narrative of the Swedish folk tradition: "Although the bear usually withdraws from human habitation, it sometimes happens at night that he visits farms, goes up on the cowshed roof, tears up a piece of it, goes down through the opening, kills a cow and carries her away the same way he came down" (Läsebok för folkskolan 1878, 94–95 [authors' translation]). The fact that children were informed about different techniques in bear hunting as well (Läsebok för folkskolan 1878, 96) shows that these animals were still present in farming societies.

The description is a mixture of observations of the wild animal and the folk tradition's image of the bear – its strength, the fact that it can stand on its hind legs and that the paws are deadly weapons. Yet there are obvious similarities between man and bear. Also noticeable are the omissions. There is no mention of lifespan, mating or how many cubs a female bear can have. The illustration of an adult brown bear on the other hand aligns with the scientific tradition. It shows striking similarities with zoological images such as Johan Wilhelm Palmstruch's brown bear in *Svensk zoologi* (Swedish Zoology) published in 1804 (Figs. 10–11). Palmstruch's illustration is described as a "faithful copy of Maréchall's excellent drawing in Ménag. du Mus. nat. d'Hist. nat., though here proportionally adapted to the format" (Quensel/Swartz 1806, 39, 50 [authors' translation]). The remark refers to the artist Nicolas Maréchal's depiction of a brown bear in *Le ménagerie du Muséum d'histoire naturelle* (De Lacépède/Cuvier 1801), the extensive and luxurious catalogue of the public zoo in Paris founded in 1794. Most of animals in the zoo came from former royal and aristocratic menageries and were skillfully depicted from life by Maréchal (Baratay/Hardouin-Fugier 1998, 99–105, 160–161; Paulson 2009, 95–96). The ethnologist Orvar Löfgren points out that the discovery of the national landscapes took place in a collaboration between authors, travellers and political debaters and was a process that transformed "highly mundane pieces of nature into homelands, loaded with history and national symbolism" (Löfgren 1993, 90–91). *Läsebok för folkskolan* was one important step in the construction of a Swedish landscape. The former emphasis on nature as a creation of God, and as such something universally valid, beautiful and good, had faded away. Now, children were taught the qualities that characterised the landscape of their own local area and other regions, the characteristics and uniqueness of Swedish nature and geography as well as those of foreign countries (Hultén 2008, 116–117). Instrumental in this process was the novel *Nils Holgerssons underbara resa genom Sverige* (The Wonderful Adventures of Nils) by the author Selma Lagerlöf, who was commissioned to write a geography and history reader for elementary schools. The book is about a young mischievous boy, who is unkind to animals and is therefore transformed into an elf-sized boy with the ability talk to animals. On the back of a goose, he goes on a journey all around Sweden. On his return to the farm, he has learnt his lesson to respect others and is turned into a real boy again (Lagerlöf 1931). The book was published in 1906/1907 and read by many generations of school children during the 20th century. Selma Lagerlöf received the Nobel prize in 1909 (Fig. 12).

The Swedish Museum of Natural History was inaugurated in 1916. The monumental building complex took almost a decade to build in what was then the outskirts of Stockholm and is to this

day the country's largest museum. The architect, Axel Anderberg (1860–1937), also designed the new headquarters of the Swedish Academy of Science opposite the museum (Beckman 1999, 14–15, 134–135, 207–208). The high granite pillars on either side of the main gate are adorned with brown bears, symbolising Sweden and Swedish nature. In comparison to earlier imagery, the presentation reflects a change in the perception of the bear (Fig. 13a–b). On one side of the entrance, a female bear is sitting down with her cubs playing at her feet, on the other we find a large, watchful male in a seated position. What we see is a bear family depicted as part of nature without any interaction with humans. A few years earlier, in 1906, the Swedish sculptor Carl Milles (1875–1955)[5] got a commission for Berzelii Park, a small public park in the city center of Stockholm dedicated to the memory of the famous Swedish chemist Jöns Jacob Berzelius (1779–1848; see Fig. 14). Milles chose to create two naturalistic sculptures of playful bear cubs on each side of the entrance, as well as otters, another species of Swedish fauna, along the surrounding wall. The rather heavy, yet simplistic style without too many details represented a new direction among artists around Europe. Carl Milles' stay in Munich, Germany, a few years earlier had proved influential in this respect. His interest in animals had developed during his study period in Paris, when he used to go to the public zoo in the Jardin de Plantes to capture its inhabitants on paper as truthfully as possible. He would make several animal sculptures in the years to come. The choice of material in Berzelii park, the stern granite, was not only in accordance with the artistic expression, but constituted an apt connection to the Swedish landscape (Cornell 1963, 22–24, 28, 41–44). The bear family theme reoccurred in many images in the 20th century; school posters were no exception there (Fig. 15). Aligning with the family theme is also the hugely popular tradition introduced by the Skansen open-air museum in Stockholm in the 1930s, namely, the yearly announcement of the names of the new bear cubs as they emerge from the den with their mother in spring. No other animals in the museum are subject to this kind of attention.

Bears in religious art

Almost all surviving medieval art in Sweden is religious. Bears are not common among the motifs, but they occur in exceptional cases. The oldest known bear depiction is from Dädesjö church in the county of Småland, famous for its 13th-century paintings on the wooden ceiling (Fig. 16). It is situated on the base of the eave and shows a bear standing on its hind legs in front of a ram. The roof has been dated to *c.* 1180 by dendrochronology and the scene was probably carved shortly afterwards. It forms part of a series of 42 carved images on the eaves representing the power struggle between a number of fabled creatures, riders and other human figures. The bear was seen as the most dangerous animal in the forest and as a symbol of anger, while the ram represented a domestic and sacrificial animal (Ullén 2020, 11, 45, 54).

The other medieval bear image to be mentioned is in Härkeberga church in the county of Uppland. The building has been dated to *c.* 1300, and the paintings of the 1480s have been attributed to the artist Albertus Pictor (1440/45–1509). The picture shows the biblical David defending his domestic animals by clubbing a bear (Fig. 17; cf. Kilström 1968, 32).

The biblical motifs also include the vernacular wall painting from Backhans's cottage in Svärdsjö from 1781, in the county of Dalarna, which shows Paul on the road to Damascus. Here, the bear symbolises Paul's rage against the Christians before his conversion (Fig. 18).

5 W. Carl E. Milles: https://sok.riksarkivet.se/sbl/artikel/9354. Svenskt biografiskt lexikon, article by U. Abel (accessed 18.11.2022).

The most remarkable Swedish description from the 16th century is Olaus Magnus' work – the *Carta Marina* map published in the 1530s and the large book *Historia de gentibus septentrionalibus* (History of the Nordic peoples) from 1555, which included a substantial number of illustrations (see Böldl, this volume). The *Historia* was written in Rome by Olaus Magnus (1490–1557), a high-ranking clergymen who was forced to go into exile after the Protestant Reformation had been initiated by the Swedish king, Gustavus I, in 1527. In his portrayal of the Nordic countries, Olaus Magnus mixed ethnology, history and cartography with tales and folklore. It was partly based on his own observations during travels in northern Sweden, but also, as if to underline the relevance of older history, legends and historiographies such as that of the 12th-century Danish author, Saxo Grammaticus.[6] As they were written long before the concept of source criticism was established among historians, some of the "truths" in the *Historia de gentibus septentrionalibus* can of course be questioned. He assumed for instance that runic stones were created by giants in ancient times and described sea creatures in the Bothnian Sea, as well as the Sámi using skies and women with hunting skills that far exceeded those of men. He emphasised the courage of the Nordic peoples and their war achievements as well as the importance of access to natural resources, such as mining and ironworks. Olaus Magnus' narrative has played an important role in the understanding of daily life in the 16th century Nordic countries and was used within general education as late as in the 19th century. His observations and interpretations are still of interest to scholars within ethnology and other disciplines today, but are evidently read and interpreted in a different way. Not least, the *Historia de gentibus septentrionalibus* conveys the beliefs among the learned at the time about nature in general, as well as specific phenomena. It is an added value that it is richly illustrated.

The description of the Nordic bears covers 11 chapters in the 18th book (on wild animals) and each chapter includes an illustration. One chapter elaborates on how to hunt a bear with cunning as well as the anger with which a bear can attack the hunter if injured. A female bear when she "breastfeeds" her young is even more dangerous (Olaus Magnus 1976, 18:25). As we have seen, through history this wrath is a reoccurring motif in narratives relating to human encounters with bears and the duel between man and bear.

Olaus Magnus describes the brown bears as omnivores, who eat, among other things, ants, crayfish and meat. When hunting deer, they jump up on its back and let the deer fight until it can no longer bear it. The female bears are supposedly more brutal than the males. His account of how a bear kills a hedgehog is even more imaginative. The poor animal was squeezed to death with a tree trunk, but remained dangerous to the bear when swallowed, as its spines could pierce holes in the bear's stomach (Fig. 19). Despite their cunning techniques, bears had a hard time catching a wild boar. The fight would be brutal and time and again would end with a victory for the boar (Olaus Magnus 1976, 18:26–27). The bears' fondness of honey and the eagerness with which they plunder bees' nests is particularly commented on (Fig. 20). The fierce competition for bees and honey is put forward as one of the reasons for killing bears (Olaus Magnus 1976, 18:28–29). The theme of the honey-loving bear has lived on until modern times, not least through Winne the Pooh, perhaps the world's most famous bear. Pooh, who really is a teddy bear but lives in the woods, is always thinking about food, particularly "hunny". The stories by A. A. Milne from the 1920s had already been translated and published, together with the iconic drawings by Ernest H. Shepard, in Sweden in the early 1930s. Possibly, Pooh served as an inspiration to the Swedish cartoonist and illustrator Rune Andréasson

6 Olaus Magnus: https://sok.riksarkivet.se/sbl/artikel/7681. Svenskt biografiskt lexikon, article by G. Broberg (accessed 23.07.2022).

(1925–1999), who created children's comics around various animals, often bears, from the 1940s onwards. In the 1960s, he developed the Bamse character in comics and animated cartoons, which are still today well-known to most Swedish children. Bamse is a small and friendly brown bear who needs to consume grandma's special honey (*dunderhonung*) in order to become the strongest bear in the world and solve all the problems that he and his friends encounter. As in the Pooh stories, his friends are other kinds of animal species (Fig. 21).

Among the aspects of bears' behaviour that are described by Olaus Magnus is the abduction of people. A bear could kidnap a shepherd when attracted to the music he played on his bagpipe for the cows to assemble, whereas the sound of a goat horn would scare the beast away (Olaus Magnus 1976, 18:31). One chapter deals with the already-related story of the beautiful virgin who became the subject of a bear's unnatural lust. To alleviate the incongruousness of the "strange procreation" between the girl and the bear, Olaus Magnus argues that nature let it "bear fruit in an ordinary fetus and the blood of the beast be absorbed in a body with human features" (Olaus Magnus 1976, 18:30 [authors' translation]). The thought among early historians, such as Saxo Grammaticus and Olaus Magnus, that the extraordinary bear-child Björn was the ancestor of the royal family in Denmark makes the bear a totem, i.e. a symbol that serves as an emblem for the family or clan. We will see that this identification with bears, their strength and cunning, is expressed in Swedish heraldry as well.

Olaus Magnus also reports how bear tamers from Russia and Lithuania would make bears dance and do tricks, such as collecting money from spectators. They could also be used for fishing and running in pedal wheels (Olaus Magnus 1976, 18:32–34; Fig. 22). The techniques to "teach" the bears were often brutal (Björklöf 2010, 230–231). By the mid-18th century, travelling menageries from abroad with dancing bears, among other animals, regularly appeared in markets and squares in Swedish towns (Svanberg 2010, 115). From the early 16th century and onwards, Swedish royalty would keep bears and use them in fights with other animals for entertainment. Others would be tamed and played with, as Queen Ulrika Eleonora the elder's painting from 1682 suggests. This was placed above a door in her husband King Charles XI's bedchamber in the royal estate, Kungsör, which was often used as a hunting lodge (Fig. 23; Berg 1965, 98). Bear motifs also form part of the décor in Queen Christina the elder's 1590s bedchamber in Gripsholm castle south of Stockholm. Christina Holstein Gottorp (1573–1625) was the second spouse of Duke Charles, later Charles IX (1550–1611). The rich decorations of the room include a large painted frieze with a sequence of portraits, animals such as deer and bears and still life depictions of fruit (Fig. 24; Von Malmborg 1971, 26–28; Lindgren 1996, 235–236.

In the 1680s, a polar bear, a gift from Tzar Peter I of Russia, was kept at the court in Stockholm. A separate building was erected close to the royal stables, which could be observed from the windows in the royal chambers as well as seen by passers-by. According to a contemporary source, the polar bear was taken for swims in the stream next to the palace and fed with fish. The spectators were impressed by the actual time the exotic animal could stay under water. When the polar bear died, he was stuffed, and, like many other animals during Charles XI's reign, he became the subject of a painting by the court painter, David Klöcker Ehrenstrahl (Fig. 25). However, the bear was not depicted as a captured animal, but in a wild and mountainous landscape, obviously perceived as his "natural" habitat (Bengtsson 2005, 192–205; Ståhlberg/Svanberg 2016, 113). Even Olaus Magnus has a passage on polar bears, in which he describes and illustrates their fishing techniques on the ice around Iceland. They are depicted on the *Carta Marina* map as well. He mentions that hunters would offer the white skins to churches in order to keep the priests' feet warm in front of the high altar (Olaus Magnus 1976, 18:24; see also Jahnsen and Korhonen, this volume).

There are numerous accounts of private citizens keeping one or two tamed grown brown bears or cubs as pets or guardians up until early 20th century in Sweden (Berg 1965, 93–98). The temptation to force this strong and dangerous animal into submission and to make it interact with humans

seems to have been fascinating and almost irresistible (see for instance Schwartz 1798, 10). As we can see, bears were present in different ways in everyday life during the first half of the 16th century and would continue to be so during the following centuries.

The bear as a heraldic motif

Bears have been used as heraldic symbols in Sweden since medieval times. The oldest known coat of arms with a bear belonged to a family called Björnsson, who owned estates in the county of Södermanland not far from Stockholm in the late 13th century and onwards. Their coat of arms depicts an upright bear showing anger. Similarly, the 14th-century coat of arms of the Björnram family in the county of Uppland depicts a furious and threatening bear. Other coats of arms would depict a bear's head as well as its legs or paws with their claws (Björklöf 2010, 321–322). To emphasise the bear's own "weapon" and – as was often done later – to combine them with cannon balls or maces, such as in the Björnram's 16th-century coat of arms, can be interpreted as an expression of anthropomorphisation. In coats of arms of the 17th and 18th centuries, bears are even depicted carrying weapons, which makes the parallel all the more obvious. One example is the 17th-century coat of arms of Mathias Björnclou (sometimes spelt Biörenklou), with a collared bear with a crown on his head, a lifted sword and his paw with his big claws hanging over the edge of a balustrade (Fig. 26). These bears are less threatening than their medieval counterparts, but they express the brown bear's well-known strength. The number of titled families increased quickly in Sweden during the 17th and 18th centuries. There were several reasons for this, one being the requirement that only members of the nobility could occupy posts in the growing state administration. The fact that quite a few would choose to associate their new name and the design of their coat of arms with a bear shows that its validity as a symbol of a noble family remained intact.

Bears also appeared in quite a few coats of arms of municipalities during the last century. In Finland, which formed a part of the Swedish realm until 1809, the bear has been and is still perhaps an even more common heraldic symbol (Björklöf 2010, 336–339).

The four sons of King Gustavus I (1496–1560) received a duchy each. Duke John's (1537–1592) first coat of arms was based on established symbols of his new duchy of Finland – a crowned gilded helmet with Swedish flags and a standing bear with a raised sword (Fig. 27). Perhaps his decision to change his ducal coat of arms later was an action that was intended to declare that he was second in line to the Swedish crown. The duke settled for a design where the coat of arms included the Finnish symbols, the three crowns of the national Swedish coat of arms, the medieval Folkung (House of Bjelbo) lion and a central shield mark with the Vasa family's sheaf symbol. The Finnish provinces of Satakunda in Turku and Pori counties still had a crowned bear threatening to raise a sword in their coat of arms in 1997 (Björklöf 2010, 336). Bears are also found on several municipal coats of arms in both Sweden and Finland from the 20th century.

It is notable that in heraldry the bear is portrayed as threatening and sometimes furious. It is largely the scary aspect of the bear that has been emphasised since the Middle Ages and which is repeated even in the municipal coat of arms of the 20th century. It is more exceptional that the bear is depicted as natural, calm or playful and less frightening.

The bear in Swedish imagery – concluding remarks

As we have shown, the brown bear has been a part of people's reality and imagination, at least in Sweden, during the last millennium and this has been reflected in images in different contexts. They appear in frescos and sculptures, in coats of arms of nobility and modern municipalities as well as in wall paintings and other art in homes, in commemorative stones, as works of art and architecture in institutions and public places, in books on history and science and stories for children. Many images focus on the encounter between humans and bears. Depending on the situation and the actors involved, the perception of the bear can be very different. When depicted in a meeting with a grown man, the bear is standing on his hind legs and the two appear as counterparts. The bear is strong, dangerous and easily angered, while the man needs to be brave, quick and cunning. Heraldry shows that Swedish royalty and nobility have identified themselves with these particular qualities associated with the wild animal. The connotations of bears interacting with children are completely different, regardless of whether the scene is in the wild or in a domestic environment. The bear is friendly, docile and good natured. Imagery showing bears in captivity also underlines these qualities together with their supposed willingness to learn, as well as their playfulness and ability to adjust to and perform for humans. The latter could, on the other hand, be interpreted as an expression of human superiority over animals, who have lost their power and have to live according to human rules. Common to all these motifs is an anthropomorphism, the readiness to identify with this animal, but we can also see that it is not one stereotypical view, but reflects many different human traits that people have seen and still see in a brown bear. In some sense, the bear can be perceived as symbolic and as crossing borders.

There is also imagery that depicts bears in the wild seemingly on their own terms without having to interact with humans. This type of depiction increases with the growing interest in nature conservation and the Swedish landscape. The protection of a bear habitat was a major reason for establishing one of the first nature reserves, Sonfjället in Härjedalen, in 1909. It is striking how depictions of bears changed around this time. While earlier works presented lonely males in the wild, now artists showed family units, often mummy bear with her cubs playing around her. This represented a new way of relating to bears, by which they were given a natural rather than mythological role. At the same time, it is still a case of anthropomorphism, as the family motif probably made it easier for people to relate to bears, to accept them and their right to exist.

It is noteworthy that so many ideas and perceptions of the brown bear have remained fairly unchanged over time. Despite the Enlightenment and the breakthroughs of modern science, traditions and folklore have lived on and have remained important. In educational material from the 1800s, scientific observations are mixed with folkloristic traditions regarding the character and habits of the brown bear. Even today, some of these folk beliefs linger in society and influence the view of this animal, not least in popular culture. The bond between bears, often cubs, and the emerging human generation seems particularly strong. Around children, these large and potentially dangerous animals, who avoid human beings if possible, are depicted as friends – unthreatening, willing to learn and help out.

Nature and culture are in many ways connected in the physical landscape and in our minds. The imagery in the study shows that this also applies to a "wild" animal such as the bear. We understand the bear through ourselves and nature through culture. Sometimes we perceive the bear – nature – as a peril to us and our resources. In other instances, we recognise ourselves – culture – as a threat to the survival of bears. The question is still on the agenda: Who has a right to live in the landscape and use it and, if there are clashes, who has priority?

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Fig. 1. Bear hunting in winter, painting by Wilhelm Wallander, 1858. Many depictions of bear hunting show a struggle between bear and man. In Swedish folk tradition, the bear has the wits of one man and the strength of seven men. Nordiska museet, Stockholm (photo: Nordiska museet).



Fig. 2. Illustrations from Fritz von Dardel's album on the travels of Mr Black & Mr Smith to Scandinavia. The humorous approach conveys von Dardel's disinterest in hunting as a sport. a: A bear suddenly appears when the party is having breakfast in the Norwegian wilderness; b: They track down the bear to his den. The animal is only wounded by Mr Smith's shot, who subsequently applies the trick of pretending to be dead. In this drawing, the bear blames himself that he was so easily tricked, and swears that he will never be so gullible again; c: "The best moment in Mr Smith's life" (after Von Dardel *1991, 35–43; photos G. Magnusson); d: Mr Black & Mr Smith visiting Mr Lloyd. The wealthy Englishman, Llewellyn Lloyd (1792–1876), established himself in Sweden in the 1820s. A keen fisherman and hunter, he particularly enjoyed the thrills of bear hunting. Lloyd published several books, for instance "Fields Sports of the North of Europe" in 1827/1828 (cf.* Dirke, *this volume;* Garnert/Rundquist *1991, 169–170, 210–212; ill. after* Von Dardel *1991, 67; photo G. Magnusson).*



Fig. 3. The Sickelsjö bear, painting by David Klöcker Ehrenstrahl. Nationalmuseum, Stockholm (photo H. Thorwid, Nationalmuseum; DelaLika 4.0 Internationell CC BY-SA 4.0).

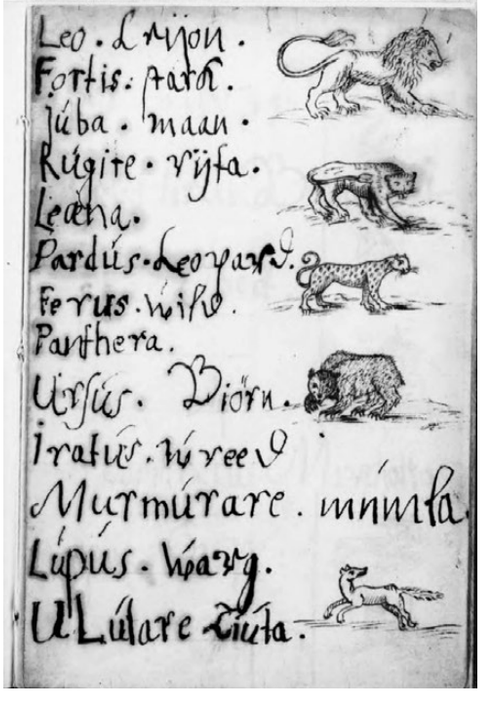


Fig. 4. Drawings of animals by the young prince and later King Charles XII (Kungliga handskriftsamlingen: Karl XII, Riksarkivet, Stockholm).



Fig. 5. Commemorative stone at Dödmansudden, erected in 1935, with the text: "In a fight with a hamnbjörn [a human bear or werebear, respectively], on 22/2/1691, the farmer Nils Persson and the dragoon Anders Slaghöök, both from Hålland [a small village in the vicinity], fell here". It was moved to its current location in 1965 in connection with the construction of the Håkren dam and power plant (photo B. Åkerström).



Fig. 6. The bear and the beauty. This woodcut from Olaus Magnus' Historia de gentibus septentrionalibus, *1555, illustrates the tradition of the origin of the Danish royal family in a relationship between a beautiful maiden and a bear. Instead of eating the maiden, the bear falls in love (photo G. Magnusson).*



Fig. 7. Mors lilla Olle, *by Elsa Beskow. Kungliga biblioteket, Stockholm (photo Å. Ahrland).*



Fig. 8. Barnkretong, *goache by Astrid Sampe, 1939, for NK:s Textilkammare. Original for a printed textile depicting well-known Swedish nursery songs. In the centre there is Mors Lilla Olle by Alice Tegnér (photo Designarkivet).*

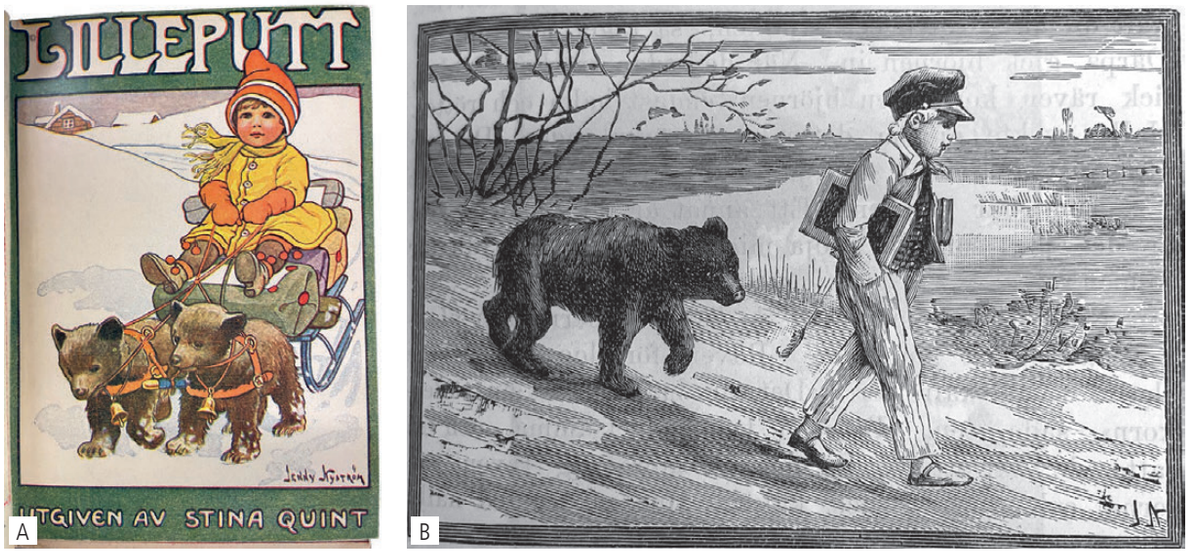


*Fig. 9. Illustrations by Jenny Nyström. a: Cover of a Christmas periodical for children (*Lilleputt *1916). A small boy with a red-orange hood sits on top of a pile of Christmas presents, while two little bear cubs are pulling his sled through the snow. Kungliga biblioteket, Stockholm (photo Å. Ahrland); b: Image illustrating a story in* Läsebok för småskolan *(Reader for primary school;* Ambrosius *1906), with a bear cub and a young boy walking to school together. Kungliga biblioteket, Stockholm (photo Å. Ahrland).*

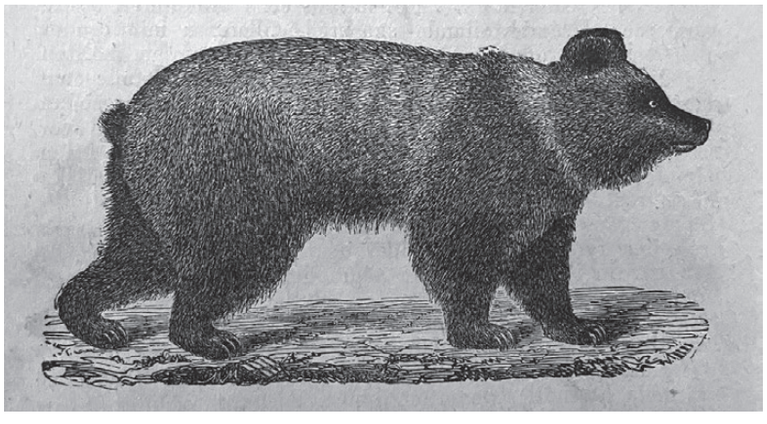


Fig. 10. Illustration of a brown bear in Läsebok för Folkskolan, showing striking similarities with the Swedish artist Johan Wilhelm Palmstruch's scientific illustration of a brown bear in Svensk zoologi *(photo G. Magnusson).*



Fig. 11. Palmstruch, in turn, refers to Nicolas Maréchal's depiction of a brown bear in the catalogue of the zoo in Paris, Le ménagerie du Muséum d'histoire naturelle, *from 1801 (photo G. Magnusson).*



Fig. 12. The author Selma Lagerlöf (see Lindén*, this volume) seemed to take inspiration from the true story of a young boy's experience with a bear family in Särsjön in Dalarna in 1850. In* Nils Hogerssons underbara resa *(Nils' adventures), the elf-sized boy Nils' encounter is more scary. He is tossed around by the cubs and is afraid of being eaten. In the end, he saves the large male bear from being shot and they part as friends. Illustration by Bertil Lybeck (1887–1945) in the 1931 edition (photo G. Magnusson).*



Fig. 13. The Swedish Museum of Natural History in Stockholm was inaugurated in 1916. The pillars by the main gate are adorned with a female bear with cubs on one side (a) and with a male brown bear on the other (b). Riksmuseet (photos Å. Ahrland).



Fig. 14. Carl Milles' two sculptures "Playing bears" were made for Berzelii park in central Stockholm in 1906 (photo G. Magnusson).



Fig. 15. By the turn of the century in 1900, school posters had been established as a pedagogical tool. One of the more frequent artists in this genre was the landscape and animal painter Nils Tirén (1885–1935). In this poster from 1919, he has depicted a bear family in their natural environment. P. A. Norstedt & Söner, Stockholm (photo Malmö museer, Attribution-NonCommercial-NoDerivs 2.5 Generic CC BY-NC-ND 2.5).

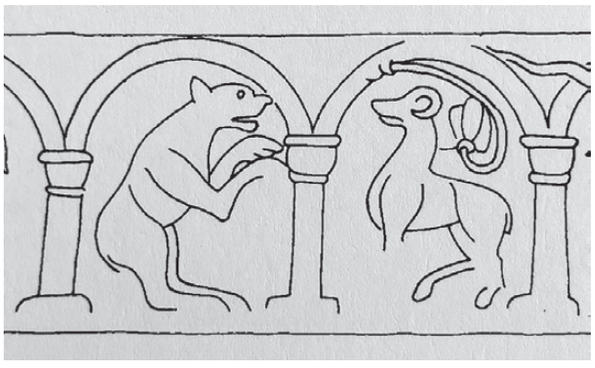


Fig. 16. Bear scene on the eaves in Dädesjö church, dated to the 1180s. There are several symbolic motifs, including a bear threatening a peaceful ram. During the Middle Ages, the bear was seen as a symbol of wrath, while the domesticated ram was a docile, sacrificial animal serving as a symbol of Christ's suffering (after Ullén 2020, 54).



Fig. 17. The scene in Härkeberga church shows the moment when, according to the narrative in the Bible, God realises David's qualities as a leader of the children of Israel. The bear symbolises rage and evil, while David represents the good whilst defending his herd from the wild beast. Samuel 17:34–35 (English Standard version): "But David said to Saul, Your servant used to keep sheep for his father. And when there came a lion, or a bear, and took a lamb from the flock, I went after him and struck him and delivered it out of his mouth. And if he arose against me, I caught him by his beard and struck him and killed him." The paintings were made by the well-known church painter Albertus Pictor in the 1480s (photo G. Magnusson).



Fig. 18. Man and standing bear, by Erik Eliasson, 1781, interiors from Backhans farm, Svärdsjö, Dalarna, now in Dalarnas museum, Falun. The painting shows Paul's conversion on the road to Damascus, a narrative from the Acts of the Apostles. The motif appears in other traditional Dalecarlia paintings, however, only Erik Eliasson has depicted the scene with a bear. The bear probably symbolises Paul's anger against Christians prior to his salvation through the encounter on the road with the Holy Spirit, after which he became one of the most important apostles of Christianity (photo G. Magnusson).



Fig. 19. Bear crushing a hedgehog. Illustration from Olaus Magnus' Historia de gentibus septentrionalibus *from 1555 (photo G. Magnusson).*



Fig. 20. Olaus Magnus devoted several chapters to the varied diet of bears. In this illustration, he shows the techniques they used in their hunt for honey in trees and in the nests of ground bees. Woodcut from Olaus Magnus' Historia de gentibus septentrionalibus *from 1555 (photo G. Magnusson).*



Fig. 21. Cover of the Bamse comics by Rune Andréasson from 1978. When Bamse eats his grandmother's special honey, he becomes the strongest bear in the world and can put all things right (photo Å. Ahrland).



Fig. 22. Tamed bear collecting money from spectators after his performance. Woodcut from Olaus Magnus' Historia de gentibus septentrionalibus *from 1555 (photo G. Magnusson).*



Fig. 23. Queen Ulrika Eleonora the elder's painting from 1682 shows children and their attendants playing with a young, tame bear. Standing on its hind legs, the bear seems to scare some of them. The man is prepared to throw a stone if needed, while the pet dog looks calm and inquisitive (photo Nationalmuseum [Erkännande-DelaLika 4.0 Internationell, CC BY-SA 4.0]).



Fig. 24. A brown bear in the frieze of the bed chamber of Queen Christina the elder in Gripsholm, painted by Sigfrid Henriksson in the 1590s (cf. Von Malmborg 1971, 28; Lindgren 1996, 235–236; photo Å. Ahrland).



Fig. 25. In 1686, David Klöcker Ehrenstrahl painted a polar bear in a mountainous landscape with two bears swimming in the background. On the stone in the left corner is the inscription: "Ursúm húnc aquatica ū(m)e Nova Zemblas", which translates to "Aquatic bear from Novaya Zemlya" (a group of islands in today's north-west Russia). Nationalmuseum, Stockholm (photo Nationalmuseum [Erkännande-DelaLika, CC BY-SA]).

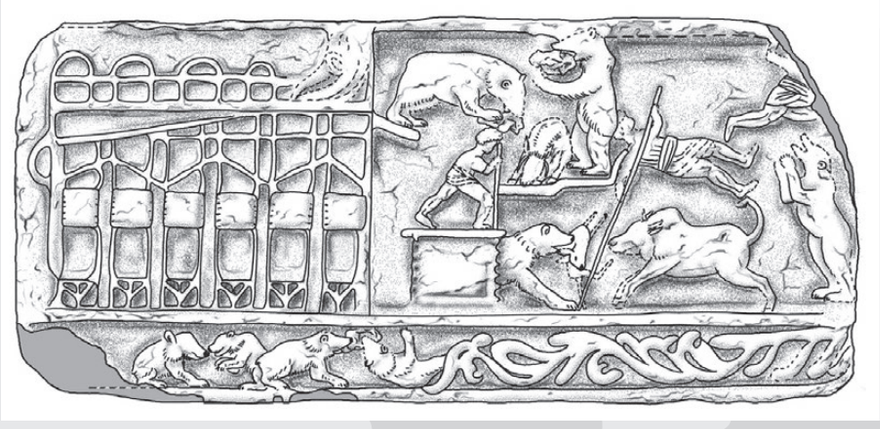


Fig. 26. Funeral coat of arms for Mattias Björnklou from 1671, Ösmo church (photo G. Magnusson).



Fig. 27. The coat of arms of the duchy of the north of Finland is depicted at the 1562 sarcophagus of Gustavus I in Uppsala cathedral. It shows a crowned bear with a raised sword against the night sky (photo Å. Ahrland).

Bears in Classical Antiquity



Bears in the arena, limestone relief from Cibyra in Turkey, 2nd or 3rd century AD (see Horn, this volume; drawing C. Golze, after a template).

Bear und human in Greco-Roman antiquity

By Florian Hurka

Keywords: Greco- Roman antiquity, art, literature, cult, stellar constellations, hunt, capture, animal training, circus, science, medicine

Abstract: The bear played a not insignificant role in the ancient Greco-Roman world – as a pest, it occasionally disrupted human life and sometimes even killed human beings. Humans, however, were the greater foe to bears by far; in huge numbers, bears were hunted, captured, and – particularly in Rome – killed or set on humans and other animals for the entertainment of the audience. Humans not only fear, hunt, and torment bears, but they also eat them, heal, clothe, and adorn themselves with parts of them. They invoke the power attributed to the bear in ceremony and cult as well as for magical rituals. They name stellar constellations after it, train it, imitate it in their art, tell stories about it, and turn the bear into an object of their scientific curiosity.

Both literary and archaeological sources of Greco-Roman antiquity provide evidence of the existence of bears in almost all regions in Europe, Asia Minor, and North Africa.[1] Occasional errors in them cannot be ruled out,[2] and some of the ancient writers, particularly when writing fictional texts, probably rather have let their imagination run wild than to refer to verified knowledge.[3] It must be considered a certainty that human behaviour influenced the animals' population, and bears even were completely driven out of their habitats in many places.[4] The question whether the ancient world

1 Keller (1887, 115), after a detailed presentation of the evidence (translation from German): "So we would have regarded the animal as living all around the Mediterranean: from the Barbary via Spain, Gaul, Germania, Italy, Greece, Asia Minor, and Syria back down to the land of the pyramids; even in the large islands of Great Britain, Sicily, and Crete, it appears to have been widespread once". Toynbee (1973, 94) is slightly more cautious in his interpretation of the literary evidence and the (zoo)archaeological finds: "throughout the Roman world – east, west, north, south, and centre – bears were to be obtained".

2 A frequently-quoted statement by Pliny the Elder (1st century AD): "it is known that there are no bears in Africa" (Pliny's *Naturalis Historia* 8, 131; for more details on Pliny, see below). Numerous references to bears from or in Northern Africa contradict this claim (cf. Toynbee 1973, 94); MacKinnon (2014, 163) takes a conciliatory position: "Pliny […] stating that, at least in his time, it was apparently well-known that bears do not occur in Africa".

3 In his heroic epic *Aeneid*, for example, the poet Virgil (70–19 BC), working under Emperor Augustus, has the hero Acestes, mythical founder of the Sicilian city Segesta, appear in the skin of a Libyan she-bear (Virgil's *Aeneid* 5, 37). The plot is purely fictional; thus, it cannot be inferred from instances such as this that after the destruction of Troy there were men in Sicily wearing the skin of Libyan bears (regarding the occurrence of bears in Northern Africa, see above), but at best how at the time of writing author and audience would have imagined a well-travelled hero.

4 MacKinnon 2014, 163, with reference to zooarchaeological findings (also already Keller 1887, 106, 108, albeit without reliable methodology).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1019–1030 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134376

knew not only the brown bear (*Ursus arctos*) but also the polar bear (*Ursus maritimus*) is commonly answered in the negative.[5]

The earliest literary evidence for bears is found in Homer's *Iliad*, which in 24 books tells the story of an episode of the Trojan War (Latacz 1985, 23).[6] In the epic (which, based on long oral mythical tradition, dates from the second half of the 8th century BC), bears do not make an appearance in its actual narrative at all – to be hunted and slain by one of the heroes, for example – but at least the animal features in the context of the so-called *ékphrasis* – that is, it is mentioned in the poetic description of a work of art, which is considered particularly sophisticated. On the shield made for Achilles by the god Hephaestus, the stellar constellation of *Ursa Major* (the "greater she-bear"; *árktos*) is depicted, as part of a cosmological framework (Homer's *Iliad* 18, 487–489): On it, the god fashions the earth, the sea, and the sky as well as the Seven Sisters of the Pleiades in it, the hunter Orion, raised to the sky, and "the She-Bear that by name also 'the wain' is called, / that rotates on the spot and always stalks Orion, / and that alone is barred from the bath in Oceanus' tides" (see Künzl, this volume).

In his account of the she-bear, Homer takes for granted that his readers know that a circumpolar heavenly body never leaves the northern night sky.[7] Instead, he rather prioritises the juxtaposition of human and animal; the she-bear stalks the hunter in its desire for water (almost humanised, it wants to bathe), which is denied to it by Orion.

Homer does not relate how the she-bear came to be in the starry sky in the first place. As in other ancient myths, tradition is inconsistent on this point; in the elaborate didactic poem by the Hellenistic poet Aratus (about 310–245 BC), there is the tale about how Zeus, in appreciation of their one-year-long services as his wet nurses, transfers the two nymphs Helice and Cynosura into the starry sky, as *Ursa Major* and *Ursa Minor*, respectively.[8] For Aratus, the recourse to remote variants is characteristic, so it cannot be surprising that the myth of Helice and Cynosura by no means is the most common version of the origin story of the stellar constellation of the (she-)bear.

Much more frequently, Callisto is mentioned in this context, an Arcadian nymph, who was raped by Zeus while in the retinue of the virginal Artemis, the goddess of the hunt. When Artemis discovered Callisto's pregnancy, the nymph not only was sent away by her, but after she had given birth to

5 Taking a different position, Toynbee (1973, 94, and, following her, MacKinnon 2014, 163), draws her conclusion from a claim by the poet Calpurnius Siculus (1st century AD) that in Rome he saw seals fight bears (*Ecloga* 7, 65–66): "for according to Calpurnius Siculus bears, which must certainly have been polar bears, could be seen in Rome chasing seals". Firstly, however, Calpurnius' *vitulus aequoreus* ("sea-calf") cannot positively be translated as "seal", secondly and most importantly, the games did not take "natural realism" (here presumably Atlantic seals versus polar bears instead of brown bears) too seriously in other matters, too (see below). The white bears in Thrace mentioned by Pausanias in the 2nd century AD in his description of Greece (*Helládos Periēgēsis* 8, 17, 3) cannot have been polar bears (Llewellyn-Jones/Lewis 2018, 317). And the suggestion by Eichinger (2005, 76) that Oppian (also 2nd century AD) "surely" mentions polar bears (*Halieutica* 5, 38–40) is not correct: *phókai* are seals (Fajen 1999, 381, considers *Monachus monachus* Hermann, the Mediterranean monk seal), which in Oppian's text scare "shaggy bears" and are able to best them in a fight even on dry land.

6 That is, the events concerning Achilles' temporary withdrawal from the fighting in the tenth and last year of the war (Latacz 1985, 91–93).

7 This circumstance gave the she-bear (*Ursa Major*) a significance for ancient seafaring that also is apparent in literary texts: Homer (*Odyssey* 5, 273–274) has his Odysseus be led by the constellation on his homeward journey, and so does Ovid (*Metamorphoses* 13, 293), who in his *Metamorphoses* (dating to about the time of the birth of Christ) likes to mention the constellation anyway (2, 171–172; 4, 625; in 13, 726, Aeneas, having lost his home after the fall of Troy, also gets his bearings from the bear on his journey to Italy).

8 Aratus' *Phainomena* (30–32). Perhaps it was only through Thales – in the 6th century BC and originating in the Orient – that the Little Bear (*Ursa Minor*) came to be in the sky of classic antiquity in the first place; before that, the respective stars were part of *Draco* (Fasching 1998, 126). Repaying the nurses by turning them into bears might reflect a special motherly aspect also attributed to the she-bear on other issues; in their infancy, the two mythical figures Atalanta and Paris were nursed by she-bears (Apollodorus' of Athens *Bibliotheca* 3, 9, 2; 3, 12, 5). Perhaps these tales are linked to the ancient notion that after their birth, bear cubs have to be given their shape by the licking of their mother (for this, see below).

a son was turned into a she-bear by the jealous Hera, Zeus' wife. Years later, she meets her son Arcas, the progenitor of the Arcadians, who fatefully has grown up to be a great hunter. Saving them both, Zeus transfers mother and son (the latter now called "Boötes") into the starry sky. The resentful Hera, however, arranges that the she-bear is not allowed to leave the night sky, but in all eternity is pursued by Boötes and his two hunting dogs.[9]

The myth of Callisto sufficiently explains that bears play a role in the cult of Artemis (they even were sacrificed to her[10]). Even without reference to Callisto, however, bears are important to the cult of Artemis – after all, as goddess of hunt and nature, she is linked to animals in general, including large beasts such as boars and lions (Roscher 1890–1894, II, 1, 564–566). This also applies to bears: In atonement for the mythical killing of a bear by Athenian youths, the festival of the *arkteía* was celebrated in Athens every five years, when young girls would dress up as she-bears (*árktoi*) to placate Artemis.[11] Priests of either sex wore bear masks during the festivities, too, and a small black-figure krater that depicts girls and priests disguised in this manner at the ceremony of the *arkteía* also features the image of a real bear.[12]

The Romans not only equated the Greek Artemis with the Italic Diana, but in the same process of appropriation (*interpretatio Romana*), they also adopted Artio, the Celtic goddess of the hunt and/or fertility, who was venerated by the Gallic-Celtic tribes of the Helvetii and Treveri in the shape of a bear (Kaufmann-Heinimann 2002, 48). For the cults of other deities, such as Cybele, Mercury, Zeus, and others, bears are attested as well.[13] Furthermore, small bear figurines were found, especially in late antique burials of Romano-British children, that might have been protective talismans (?).[14]

But the bear had a place not only in cult and religion, but it also occurs in several varieties of magic, including transition magic. In the *Odyssey* (which is slightly younger than the *Iliad*), the baldric of Hercules in the underworld is adorned not only with lions and boars, but also with bears (Homer's *Odyssey* 11, 610–612): "Terrifying was the belt about his breast, a baldric of gold, on which wondrous things were fashioned, bears and wild boars, and lions with flashing eyes, and conflicts, and battles, and murders, and slaying of men". This is not mere decoration; rather, it is meant to place the strength and ferocity of the animals, which in ancient literature often are characterised as violent and cruel,[15]

9 Aside from the main version sketched out here, which is told in particular detail in Ovid's *Metamorphoses* (2, 401–530), there are numerous variants (cf. Roscher 1890–1894, II, 1, 931–935) that played their role in the cult, too. In the Arcadian town Scias, for example, the sanctuary of Artemis Kalliste was located on the burial place of Callisto, who, according to this variant of the myth, was not put into the sky, but – in her bear shape – killed by Artemis (Pausanias' *Helládos Periēgēsis* 8, 3,7; 8, 35, 8). Archaeological evidence also substantiates the story of Callisto, most impressively on a 4th-century red-figure *pelike* that depicts the moment of the nymph's transformation – in terror, Callisto looks at her left hand that already has become a paw (see the figure published in Eichinger 2005, 327).

10 In Patras, Pausanias reports, bears and other animals were sacrificed alive to Artemis (*Helládos Periēgēsis* 7, 18, 13). He asserts that he watched with his own eyes as a bear tried to escape being burned to death, but was brought back to the pyre by the priests attending to the sacrifice. "No one has been injured by the animals in the process yet", he claims. Votive offerings to Artemis in the shape of bears (statuettes, reliefs, bear's teeth) also occur elsewhere (Eichinger 2005, 63).

11 Regarding the *arkteía*, cf. Perlman 1989, 116–121. Scanlon (2002, 164) interprets the act of dressing up as she-bears as a sort of initiation ritual; the bear, perceived as half-human (see below) symbolises the transition from the girl (wild, maidenly) to the woman (tamed, wife/mother).

12 Cf. figure in Eichinger 2005, 326. Kahil (1977, 91) concludes that real, living bears took part in the *arkteía*, too (regarding tame animals, see below in the main text).

13 Eichinger 2005, 62, 97. Zeus himself in one of his numerous love affairs is said to have approached the coveted woman in the guise of a bear (Clement's of Rome *Homiliae* 5, 13, 2).

14 E.g. in York, Malton, and Colchester (Toynbee 1973, 99), as well as in Trier and Cologne (Eichinger 2005, 95). It remains unclear why the bear was invoked here – possibly for its motherly qualities or in reference to Christian symbolism (hibernation as a symbol of Resurrection: Comstock/Vermeule 1971, 347); possibly these objects merely were toys (Toynbee 1973, 100)? Bear's teeth were used as amulets, too (Keller 1887, 121; see O'Regan, this volume).

15 Cf. Cherubini's (2009, 82) "eloquent dossier" (with omissions) – *furor* ("rage, madness": Horace's *Ars Poetica* 472; cf. Martial's *Epigrammata* 6.64.27–32), *rabies* ("anger": Lucan's *Pharsalia* 6.220, 222; Pliny's *Naturalis historia* 8.130), *fenestus* ("deadly": Apuleius' *Metamorphoses* 7.24), *truculentus* ("cruel": Ovid's *Metamorphoses* 13.803), *ferus* ("wild":

in an expressive relation to the human violence depicted in the imagery – both traits defined Hercules' life (and, according to Homer, continued to do so even in Hades, where Hercules is portrayed as fierce and combative).[16]

Similar appropriations of the bear's aura of a powerful and wild beast also occur elsewhere; in legends, demigods are begot on the skins of bears or lions, or in their youth are fed on the offal of lions, wild boar, or bears.[17] Also, participants in historic battles are described in fictitious texts (without historical validity) as wearing bear costumes.[18] But in reality also, the military drew on the symbolic power of the bear; in Rome, distinguished ranks such as the horn players (*cornicines*) or the bearers of standards and effigies (*aquiliferi* and *imaginiferi*) wore the skins and/or the heads of bears.[19]

The transition from magical appropriation to art and decoration is fluid: Arcadian coins use the bear motif in order to refer to the mythical progenitor of Arcadia, the aforementioned Arkas, son of Callisto.[20] Sculpture, reliefs, and pottery show the animal, frequently in connection with human cultural practices (e.g. hunt, arena, or cult),[21] but there also are entirely non-propagandistic commodities, such as a bear statuette that was part of a grater, or the handle of a pestle decorated with bear motifs (Eichinger 2005, 69, 106). Both objects could have been used in the preparation of cosmetics, one ingredient of which was bear's grease (Zahlhaas 1996, 103). Corresponding storage boxes occasionally were decorated with bear ornaments, too. There are Roman oil lamps depicting bears in their *discus*, as well as vessels in the shape of bears (*rhyta*) that perhaps were used for the storage of bear's grease, which was a valued item in the Roman medicine chest (Eichinger 2005, 89, 106). Obtained primarily from the animal's kidneys, it promised to alleviate a wide spectrum of ailments,

Seneca's *Oedipus* 151), *trux* ("fierce": Gaius Valerius Flaccus' *Argonautica* 2.73), gifted with an *ingenium immansuetum* ("uncontrollable nature": Ovid's *Metamorphoses* 15.85). The bear's cry is described by the verb *saevire* ("to rage": Virgil's *Aeneid* 7.17), and even when it is drinking, the animal *aquammor suvorat* ("devours water with bites": Pliny's *Naturalis historia* 10.201). These are the fierce beasts that Oppian will call a "bloody race", gifted with "a deadly mouth with sharp teeth" and a "fierce heart" (Oppian's *Cynegetica* 3, 139–145).

16 At the same time, the ornament might symbolise the victory of humankind over nature's threats to it: Hercules is a mythical conqueror of threats, and among his twelve labours he defeated the Nemean Lion and the Erymanthian Boar; according to Diodorus Siculus' *Bibliotheca historica* 4, 17 (1st century BC/AD), he is also said to have eradicated the Cretan bears.

17 Aeneas, mythical hero of the Trojan War and later Proto-Roman, is supposed to have been sired by Aphrodite and the Trojan Anchises on a bed decorated with the skins of bears or lions, according to stanza 159 of the pseudo-Homeric *Hymn to Aphrodite* (date unclear, but certainly post-Homeric and pre-Hellenistic: Lesky 1971, 110–112). Regarding offal, cf. Achilles (Apollodorus' of Athens *Bibliotheca* 3, 172). In contrast, bears appear in the family trees of mythical heroes only in exceptional cases: Odysseus' grandfather Arkeisios is said to have had a she-bear for his mother (*Etymologicum Magnum* 144, 23–32 [according to Aristotle]), cf. Franco 2017, 52–53). The liaison between the Thracian virgin Polyphonte and a bear (brought about by the offended love goddess Aphrodite) resulted in the birth of two savage giants (Antoninus Liberalis' *Metamorphoses* 21; cf. Cherubini 2009, 79).

18 Cf. in addition to the passage by Virgil mentioned above (note 3) also Silius Italicus (*c.* AD 25–100), who in his epic *Punica* (4, 558) features an Italic warrior wearing the skin of a Samnite she-bear; also Statius (AD 40/50–pre-96) in his *Thebaid* (4, 304); cf. other examples in Keller 1887, 121.

19 Vegetius' *De re militari* 2, 16 (4th century AD), cf. Devijer 1992, 146. According to Pausanias' *Helládos Periēgēsis*, the Arcadians also wore the skins of wolves and bears during the fighting in the First Messenian War (8th century BC; Pausanias 4, 11, 3). This information was provided to Pausanias by Myron of Priene (probably 3rd century BC), a source that is now lost (Pausanias 4, 6, 1–2) and can hardly be regarded as trustworthy. A civilian use of bear clothes is reported by the Greek geographer Strabo (*c.* 64 BC – AD 19), who claims that in Mauretania, people not only sleep on bear skins, but also dress in them (*Geographica* 17, 3, 7). Despite some travels he undertook himself, most of Strabo's information on regional geography is based on literary sources (cf. Lesky 1971, 993).

20 Llewellyn-Jones/Lewis 2018, 320. Keller (1887, 109–111) mentions bear coins from Celtic Gaul, Spain, and Thrace as well.

21 For archaeological evidence, see Toynbee 1973, 99, and Eichinger 2005, *passim*. In addition, there are a few literary references, such as Martial's *Epigrammata* 3, 19 (1st century AD), which mention a bronze bear sculpture in Rome (now lost).

including chilblains,[22] gout, hair loss, dandruff, pains of the neck or loins, pains of the feet, burns, and ulcers (Pliny's *Naturalis historia* 28, 29, 163, 192, 198, 221, 235, 251). Bear bile (respiratory tract, eye complaints: ibid., 28, 167, 193), external application of bear's blood (abscesses: ibid., 28, 217) or bear's lung (excoriated feet: Dioscorides' *De materia medica* 2, 38), and the consumption of testicles (epilepsy[23]) were recommended as well. In farming, the blood and fat of bears also served as pesticides and antifreeze agents.[24]

The influence of bears on cult, magic, decoration, and medicine probably was based on respect for, possibly also the fear of the bear's strength. It is a fact that there were encounters that were fatal for humans.[25] More often, the bear acted as a pest for agriculture – a number of archaeological objects show a bear plundering fruit trees,[26] and in poetry, the bear occasionally is described as a threat to farm life as well.[27] Even if such poetic evidence cannot readily be transferred to contemporaneous agriculture (it was written by urban poets who in their compositions do not betray any profound agrarian knowledge), it nevertheless testifies to the image of the bear in the minds of the poets and their sophisticated audience.

This image may by all means be founded on personal experience: The earliest documentation of performances of bears in Rome (so-called *venationes*, "hunts") is provided by the historian Livius, who worked under Emperor Augustus, for the year 169 BC.[28] Archaeological and literary evidence of bears in Roman circus events attest to this practice right into late antiquity (ancient literary sources frequently mention high numbers of up to 1,000 animals).[29] At the conclusion of the spectacle, the animals mostly lost their lives (the meat might have been eaten afterwards[30]), even if their death

22 Dioscorides' *De materia medica* 2, 76. Pedanius Dioscorides is the author of *On Medical Material*, the most important pharmacological book in antiquity (second half of the 1st century AD); cf. Lesky 1971, 999.

23 Pliny's *Naturalis historia* 28, 224. Bear bile also is supposed to be beneficial against this disorder, if it is allowed to melt in the mouth (Dioscorides' *De materia medica* 2, 78).

24 Pliny's *Naturalis historia* 17, 265. A mass utilisation is hardly conceivable, of course.

25 From Thyrion (Acarnania), the funerary inscription of a woman who was killed by a bear is known from the 1st century BC (Perlman 1989, 115).

26 E.g. central discs of oil lamps as well as mosaics and reliefs (Eichinger 2005, 89).

27 The Roman poets Horace (65–8 BC) and Ovid (43 BC – AD 17/18) tell of bears prowling around sheep shelters and being considered a danger even to larger livestock (Horace's *Epodi* 16, 51; Ovid's *Metamorphoses* 7, 546). Both passages, however, do not reflect the poets' living environments: Horace conjures up a fanciful counter-world to a Rome ravaged by civil war – a utopian new beginning in the Islands of the Blessed, where "does not growl the bear around the sheep pen at night", while Ovid has the mythical Aeacus report how during the spread of an epidemic in Aegina, wild animals suffer as well – the boar loses its fierceness, the weakened bear does not dare attack strong cattle anymore.

28 Livy's *Ab urbe condita* 44, 18, 8 (forty bears in the Circus Maximus). In his monumental book *Ab urbe condita*, Livy draws on numerous unnamed accounts (in doing so, he frequently lacks criticism and diligence: Fuhrmann 2005, 346). Only an impersonal *notatum est* ("it is noted") is added to the information about the bear at the games of the Aediles Publius Lentulus and Scipio Nasica in 169 BC.

29 For extensive archaeological and literary evidence, see Eichinger 2005, 79–81. One thousand bears are mentioned in the so-called *Historia Augusta* (SHA), a collection of the biographies of thirty emperors that is of unclear authorship and date (Von Albrecht 1994, 1102–1104), in regard to the games of the later Emperor Gordian I (*c.* AD 159–238; *SHA Gordiani Tres* 3, 6, 7). The historian Cassius Dio (2nd/3rd century AD) is sceptical about these numbers, however (*Historia Romana* 61, 9, 1); cf. MacKinnon (2014, 466): "The figures given in our ancient texts may be exaggerated, but there is no question that the number of animals that perished during several centuries of spectacles was enormous".

30 Prell 1997, 86. The gruesome information provided by Tertullian (*Apologeticum* 9, 11; around AD 198) that the Roman audience demanded bears' stomachs filled with human flesh, probably should be regarded as the polemic hyperbole of a Christian author attacking pagan practices, but it nonetheless confirms the custom of eating the flesh of the animals killed in the Circus (at least at the end of the 2nd century AD). This fits in with a scene from the comical-whimsical novel by Apuleius (also 2nd century AD); in it, all the bears bought for a spectacle die before the games, and the peasantry devours the cadavers (the episode is given its macabre climax by the protagonists' idea to dress up one of them as a bear and sell him to the unlucky organiser of the games, which ends in tragedy when the false bear is hunted and killed: Apuleius' *Metamorphoses* 4, 13–21). In the parody of a dinner party in the picaresque novel by Petronius (probably 1st century AD), the taste of bear meat is compared to that of roasted boar (Petronius' *Satyrica* 66, 5–6); at least to the dinner guests in the novel, the taste appears to be unfamiliar (from this, Keller [1887, 122] draws the conclusion that the

not always was the centre of attention; they could be killed by gladiator hunters (*bestiarii*),[31] or be hunters themselves (such as in gruesome enactments of myths, for example those in which a convict, dressed up as Prometheus, would be torn to pieces by a bear).[32] Other animals also were chivvied in the arena for the entertainment of the audience, which included pairings that must appear rather absurd (bear versus rhinoceros, or bear versus seals; cf. Martial's *Liber Spectaculorum* 22; Calpurnius Siculus' *Ecloga 7*, 65–66).

Occasionally, however, the audience of ancient times also saw more peaceful types of exhibition; in Greece, bears were displayed by animal tamers.[33] Sometimes, bears even had to serve as pets – a bear kept in that manner appears to be depicted on the Harpy Tomb in Xanthos (*c.* 400 BC; Eichinger 2005, 64, 68, 334), and in the 2nd century AD, Pausanias reports in a sort of learned "travel guide" for Greece that at times, both white boar and white bears from Thrace are kept as pets.[34]

In Pausanias' time, Greece had been under Roman rule for a long time – and in Rome, evidence for tame bears is more numerous: Roman law not only covers the question of wild bears,[35] but also regulates cases concerning the subject of "bears in private households".[36] This custom seems to have been so common in the upper classes in the 1st century AD that philosopher and politician Seneca (*c.* 4 BC – AD 65) was in a position – in order to support his moral philosophical reasoning that it is shameful for a person to harm another – to use the reference to the "kindness" of humans to tame even bears and lions that then "calmly allow themselves to be petted in the midst of houses": Any-

consumption of bear meat was uncommon). In Greece, bear meat occasionally was on the menu (for zooarchaeological evidence, see MacKinnon 2014, 207).

31 *Bestiarii* frequently are depicted along with bears in archaeological evidence (Eichinger 2005). From the Roman Iron Age, some absurd occurrences are reported. According to Cassius Dio (*Historia Romana* 61, 9, 1), Emperor Nero (reign: AD 54–68) made his lifeguard's cavalry fight against 400 bears, and Emperor Commodus (reign: AD 180–192) is said to personally have slain 100 bears in the arena in a single day (ibid., 72, 18, 1).

32 On the occasion of the inauguration of the *theatrum Flavianum* (i.e. the Colosseum) in AD 80, the poet Martial composed the *Epigrammata*, which enthuse not without wit but without compassion about the different variants of the performances of bears. Apart from the Prometheus epigram (Martial's *Liber Spectacularum* 7), they also commemorate one production of Orpheus that is said to have taken place precisely according to the myth (Orpheus tames wild animals by his skills at singing), but with the difference that in the theatre, Orpheus "was savaged by an ungrateful bear" (ibid., 21, 7).

33 Bears that are dancing, wrestling, and imitating humans are mentioned by Isocrates (*Antidosis* 213) in the 4th century BC as part of annual performances in Athens (cf. Shelton 2014, 474). On a cut gem are depicted the she-bear Eirene ("Peace") and its trainer Marcellus. Some literary references to peaceful bears call for some caution, of course; the notion that Pythagoras tamed a she-bear that after its release then became a vegetarian and spared the lives of its fellow creatures, is – in view of the fondness of ancient biographies for wondrous and apposite anecdotes – not quite credible (Pythagoras insisted on the abstinence from meat consumption due to his doctrine of the transmigration of the soul); Iamblichus' *De vita Pythagorica* 60 (Iamblichus lived between *c.* AD 275 and 330, Pythagoras in the 6th century BC). Regarding the historical unreliability of ancient biographies, cf. Lesky 1971, 778. – Also without historical significance is the charming idea of the Greek poet Theocritus (3rd century BC) that the enamoured Cyclops Polyphemus plans to give two bear cubs to his adored nymph Galatea as a present (*Eidyllia* 2, 18, 3; imitated in Ovid's *Metamorphoses* 13, 834–837); in his helplessness, the love-crazed ruffian woos the elegant nymph with entirely misguided means (among other things, he brags about the magnificence of his cave, his one eye, and his bristly forehead).

34 Pausanias' *Helládos Periēgēsis* 8, 17, 3. Unlike regarding the "swan eagles" and white deer also mentioned in this context, Pausanias does not include the assurance that he has seen these bears with his own eyes, however.

35 MacKinnon 2014, 207: "These laws cite that wild animals belong to no one, and may be hunted by anyone, regardless of location"; Gaius' *Institutionum libri IV* 2, 16 (*c.* AD 120–180), Paulus' *Digesta* 286, 28 (born about AD 160), *Codex Theodosianus* 15, 11, 1 (statute book under Emperor Theodosius II, from AD 435).

36 In a late antique collection of legal texts, the *digests*, Ulpian (born about AD 170) writes (Paulus' *Digesta* 21, 1, 40–42): "Nobody should keep a dog, wild boar or lesser boar, wolf, bear, panther, lion, and generally any animal which might do harm, whether these animals are free or bound or tied up so that they are confined with chains to stop them doing injury, in a place where public passage is made, in such a way that it might harm anyone or cause damage. If this is contravened and a free person has been killed, the penalty will be 200 *solidi*; if a free person is said to have been injured, it will be as much [as] a judge considers good and fair; and for all cases, double the value of the damage that has been done or caused" (Thomas 2017, 356–357; cf. MacKinnon 2014, 207). Cf. also Tertullian's *Ad Martyras* 5 (2nd/3rd century AD): "How often have wild beasts escaped from their cages and devoured men in the middle of cities!".

one who is so kind towards animals, he argues, should not do harm to their fellow man.[37] In Rome, too, trained animals were displayed in public, as demonstrated by a number of archaeological finds (Eichinger 2005, 85) and by literary sources regarding the games of the Emperors Carus, Carinus, and Numerian at the end of the 3rd century AD; in these, bears are said even to have enacted a *mimus* (a short and vulgar stage play).[38]

Necessary for all these varieties of bear spectacles was the capture of wild bears,[39] which – at least in the Roman Imperial Era, in which demand for bears appears to have increased in comparison to the Republic (Jennison 1937, 62) – was undertaken in part by the military.[40] In the *Cynegetika* ("On hunting"), a didactic poem from the late 2nd century AD attributed to Oppian, such a bear hunt is described comprehensively (4, 354–424).[41] Dogs locate the bear's den, hunters stake out a kind of funnel with nets, then the bear(s) are flushed out and chased into the funnel, where the flight of the animals is supposed to end. After this, the bears are constrained and finally, bound to wooden boards, transported off in cages or crates. Both Oppian and Plutarch (*c.* AD 50 – *c.* 120) point out, however, that frequently the bears escape from their hunters (according to Plutarch, by rolling out under the nets[42]). Oppian's description of the bear hunt corresponds quite well with the depiction in a Roman mosaic that (among other details) features the escape of several animals from the hunters' nets.[43] Apart from this elaborate method, traps were used to catch the animals alive.[44]

At least in late antiquity, the position between hunter und buyer could be taken up by professional animal traders, who apparently could specialise in individual species of animals. In several places in his artistically-composed letters, Symmachus, an elegant and self-confident Roman senator (*c.* AD 345–402), mentions bears that he obtains – or tries to obtain – for games organised by him;[45] in one

37 Seneca's *De ira* 2, 30, 5. In dealing with Roman sources, however, a certain caution is required, too; that Emperor Valentinian I (reign: AD 364–375), according to Ammianus Marcellinus (*c.* AD 330–400), appointed keepers for his she-bears Mica aurea ("Gold kernel") and Innocentia ("Innocence") to keep them wild and bloodthirsty (29, 3, 9) has caused critical philologists to doubt the anecdote, especially in the light of the rather negative image painted by Ammianus of the emperor, perhaps uncritically following a literary source (cf. Den Boeft et al. 2013, 134). This applies all the more to the attacks of the Christian apologist Lactantius (*c.* AD 250–320), who in his pamphlet *De mortibus Persecutorum* 21, 5–6, accuses the despised Emperor Galerius of the same infamy, namely, of feeding people to his bears.

38 *Historia Augusta (SHA)* 19, 2. Frequently quoted is a passage from the abovementioned picaresque novel by Apuleius (*Metamorphoses* 11, 8), in which the first-person narrator spots a bear dressed up as a woman in a litter in a precession for the goddess Isis.

39 Whether bears also were bred in Roman game enclosures (*vivarium*, pl. *vivaria*) is unknown. By itself, breeding certainly would have been inadequate to satisfy the demand of the arena, however. Regarding the Roman "zoos", cf. Thomas 2017, 358–360.

40 2nd-century votive inscriptions in Cologne and Bulgaria document the military chain of command in two hunts. An inscription in Xanten identifies an *ursarius* (probably "bear hunter") for the 30th legion (Eichinger 2005, 76).

41 Oppian's didactic poem in four books is dedicated to the Emperor Caracalla and was written after AD 198. It is based not only on specialist literature (the main sources are Aristotle and his pupils of the Peripatetic school), but it also has fantastical traits that are reminiscent of popular literature of *memorabilia* (regarding this work and the question of authorship, cf. Lesky 1971, 910).

42 Plutarch's *Moralia* 919. Aristotle in his natural scientific studies about bears (*Historia animalium* 600b) adds that no one – or at least only very few – ever caught a pregnant she-bear.

43 Figure in Eichinger 2005, 373. There are several similar mosaics (Toynbee 1973, 96; Eichinger 2005, 78) that frequently give names, occasionally even telling names, to the bears depicted in them, such as Dionysos, Tachine ("the fast one"), Crudelis ("cruel"), or Omicida ("man killer"; cf. Toynbee 1973, 96–97).

44 Roman law mentions pit traps (probably in connection with questions of liability): Paulus' *Digesta* 286, 28; cf. Pollux' *Onomasticon* 5, 61; Pompeius Festus' *De significatione verborum* 67. De Garies Davies (1989, 280 note 2) also refers to an archaeological find in the Roman fort of Zugmantel, Germany. Keller (1887, 118) however, assumes that pit traps did not play a significant role in the bear hunt (unlike in the wolf hunt): "often enough, bears will just have climbed out of them again".

45 That an ambitious man like Symmachus showed a particular passion for bears is no coincidence; bear hunts appear to have been popular as late as the 5th and 6th centuries AD and in the Eastern Roman Empire (Toynbee 1973, 93, with archaeological evidence).

instance, he is hoping for the speedy delivery of Italic bears (the more, the better; cf. Symmachus' *Epistulae* 7, 121), in another, for bears of Dalmatian origin (ibid., 9, 142), then he is afraid that the merchandise he ordered might clandestinely be replaced with inferior animals (ibid., 7, 121), he writes about bears from overseas (ibid., 9, 135), and finally mentions the professional bear traders (*ursorum negotiatores*; ibid., 5, 62), who, in this case, prove to be not particularly professional – only one bear cub was delivered to Rome in time, and that was almost starved.[46]

In addition to capturing bears alive, there was the actual hunt aimed to kill the animal. Here, it is necessary to differentiate between pest control, which, among other methods, used poisoned bait,[47] and the hunt for pleasure or prestige – the "gentleman hunt" (MacKinnon 2014, 207–208). Many instances are known of this latter in connection with the mythical and real grandees of antiquity; the epicist Statius, for example, has the hero Achilles (grown strong from infancy on a diet of the animal's offal; cf. Apollodor's of Athens *Bibliotheca* 3, 172) hunt bears, and Plutarch attests to the bear hunt in his biography of Alexander the Great, which contains all sorts of anecdotes (cf. Statius' *Achilleid* 2, 96–156; Plutarch's *Alexandros* 41, 2). There also is impressive archaeological evidence. A Cretan bronze shield (probably from the 8th century BC) portrays the hunt for bears (and lions) as a heroic feat by mounted and un-mounted warriors and archers (Eichinger 2005, 68), and the royal tomb of the Macedonian Argead dynasty (to which belonged Alexander the Great) in Vergina (4th century BC) features a hunting frieze that depicts a royal hunt for lions and bears – on rocky terrain, a bear is being attacked with lances, spears, and nets.[48]

In Rome, it was especially the emperors who hunted bears, perhaps inspired by the Hellenistic royal courts (Lorenz 2000, 92); after the successful hunt for a she-bear, Hadrian (reign: AD 117–138), for example, founded the town Hadrianotherae in Mysia (cf. *Historia Augusta [SHA] Hadrianus* 20, 13; Cassius Dio, *Historia Romana* 69, 10, 2) and had himself portrayed prestigiously in a relief hunting the bear;[49] in the Boeotian city of Thespiae, he dedicated the trophy of a killed she-bear to the god Eros in a self-authored inscription (*Epigrammata graeca* [Kaibel] 329, no. 811).

The perhaps least pragmatic approach to bears is displayed by the ancient natural sciences under the domineering influence of Aristotle (384–322 BC). Just as in regard to other animals, the great empiricist in his zoological studies takes interest particularly in the bears' mating habits – heightened aggressiveness during the mating season (Aristotle's *Historia animalium* 571b, 26–28), copulation primarily in a lying position, the animals' winter rest lasting at least forty days (ibid., 579a, 18–20), and the process of giving birth during winter rest (ibid., 579a, 18–20). Their wide-ranging menu also is familiar to him (a bear has a very varied diet, such as fruit, honey, crustaceans, ants, or meat).[50] In several of these aspects, Aristotle sees parallels to humans.[51]

46 Symmachus' *Epistulae* 2, 76. In view of the literary and artistic features of the epistles (Von Albrecht 1994, 1146–1148), it is doubtful whether this amusing turn of events can be taken at face value.

47 Xenophon's *Cynegeticus* 11, 2. Author, soldier, and politician Xenophon (*c.* 430 – *c.* 354 BC) perhaps wrote his book on hunting skills during his youth; it might, however, have come from someone else's pen (Lesky 1971, 695).

48 Eichinger 2005, 69, 337. Other Greek burial monuments also depict the bear hunt (Toynbee 1973, 94–95; Eichinger 2005, 67).

49 Preserved as one of the four Hadrianic *tondi* of the Arch of Constantine in Rome (Toynbee 1973, 94).

50 Aristotle's *Historia animalium* 594b, 5–7. Aristotle teaches, however, that bears only eat rotting meat (594b, 16–17). Aelianus (*De natura animalium* 5, 49) claims the opposite and thence recommends dropping on the ground in the case of a bear attack and holding one's breath. This behaviour is also deemed an effective procedure in a bear attack in a fable by Aesop – while an unfaithful friend escapes up a tree, the other one plays dead, and after a long examination is spared by the bear (*Corpus Fabularum Aesopicarum* 66).

51 Apart from being omnivorous and (wrongly assumed) mating in a lying position, the bear, according to Aristotle (*Historia animalium* 507b, 594b), is walking upright just like humans (594b), has only one stomach, and its paw is similar to the human hand (five fingers, three phalanges: 498a). An explicit connection between the limbs of humans and bears is drawn in Oppian's *Cynegetica* 3, 144: "hands like human hands, and feet like human feet".

A large portion of the information provided by Aristotle is correct and may, at least in part, be founded on the practical knowledge of a hunter (Epstein 2019, 217). There are, however, also misconceptions such as the claim that bears (just like foxes or lions) not only give birth to tiny (of a size between a weasel and a mouse), but also physically largely undeveloped young.[52] False assumptions as this often even are embellished by the ancient natural sciences after Aristotle;[53] the account, for example, of the almost shapeless bear cubs is supplemented by the information that they are only given their shape by the extensive licking of their mother,[54] and Aristotle's remark that at "about the period" of hibernation, bears grew "especially fat, so that they hardly are able to move" (Aristotle's *Historia animalium* 600a, 29), is turned by Pliny the Elder into the notion that bears grew fat "miraculously" *during* hibernation (in caves and thickets) and subsisted after a particularly deep first period of rest by sucking on their front paws.[55]

At least in part based on personal experience, Aelian and Pliny the Elder provide some further information regarding anatomy and behaviour of bears; they claim that the head was the weakest part of their body (in the arena, they frequently are killed by a single blow to the head[56]), that they attacked oxen by attaching all four limbs to their head and horns to wear them out,[57] and that they customarily climbed down from trees backwards (Aelian's *De natura animalium* 6, 9; Pliny's *Naturalis historia* 8, 130). "No other animal", concludes Pliny his descriptions on a harsh and moralising note, "acts more cleverly in its misdeeds despite its stupidity" (*Naturalis historia* 8, 131).

These Plinian "misdeeds" of bears probably stem from the animal being perceived – as touched upon above – as a pest and from its image as being wild and cruel. In contrast, the somewhat paradox "stupid cleverness" on one hand possibly refers to the bears' successes in foiling human attempts to keep them away (e.g. stop them from raiding fruit trees) and to capture and/or kill them (i.e. the challenges of the bear hunt),[58] on the other on the bears' seemingly cumbersome manner of moving; to symbolise the power of love, bears, allegedly so sluggish, occasionally are depicted with Aphrodite/

52 Aristotle's *Historia animalium* 540a, 1. Keller (1887, 123): "This is one of the most widespread myths of the natural history of classic Antiquity". At least, newborn bears are, in fact, very small, naked, and largely helpless.

53 The most important known successors of Aristotle are Aelian and Pliny the Elder: Claudius Aelianus (*c.* AD 170–235), author of an extensive book on animals (*De natura animalium*), was a classic (Roman) "study room scholar", who obtained his knowledge of the world through the study of Greek books (and who also wrote in Greek); cf. Lesky 1971, 953. Gaius Plinius Secundus (AD 23 or 24–79), on the other hand, was a man of action; after a distinguished military and administrative career, he died as the commander of the western fleet in the Mediterranean in the attempt to evacuate the victims of the eruption of Mt Vesuvius. He won literary acclaim as the author of historical and scientific studies, of which only his natural history (*Naturalis historia*) in 37 books still exists today (it is the largest surviving prose work of antiquity). Like Aelian, Pliny – without doing research of his own – consulted the most significant reference books directly or at least in excerpts (Pliny lists 327 Greek and 146 Roman authors). The zoological books primarily are based in the traditions of Aristotle's school and that of his successor Theophrastos, supplemented by notes taken from Roman authors (Von Albrecht 1994, 1004). A special study about bears penned by Sostratus (1st century AD) is lost (cf. Keller 1887, 123; 1909/1913, 180).

54 This concept is very common not only in ancient specialised writing (Plutarch's *Moralia* 494; Pliny's *Naturalis historia* 8, 126; Oppian's *Cynegetica* 3, 163–165; Aelian's *De natura animalium* 2, 19 and 6, 3). In his book mentioned (146–148), Oppian explains the incompleteness of bear cubs with the bears' desire to mate again as soon as possible. In a biography of Virgil written during the time of the Roman Empire, the dictum of the Roman national poet can be found that the arduous honing of his verses was similar to the licking of the bear cubs by their mother (Suetonius' *Vita Vergilii* 22).

55 Pliny's *Naturalis historia* 8, 127. Aelian (*De natura animalium* 6, 3) specifies: sucking on the right paw. Keller (1887, 123) points out that the licking of the paws in fact been has observed on animals in captivity (confirmed by Lozza 1998, 33; for the care of skin and claws).

56 Pliny's *Naturalis historia* 8, 130. Pliny also is aware that bears protect their heads with their paws when jumping off a rock.

57 Pliny's *Naturalis historia* 8, 131. The origin of this notion might well be an occurrence in the arena (cf. the relevant mosaic in Dunbabin 1978, fig. 48).

58 Llewellyn-Jones/Lewis 2018, 321, including the reference to Plutarch's *Moralia* 971e: She-bears withdraw into their caves backwards to trick their pursuers.

Venus or Erotes ("even the most awkward apathy must follow the magic of love"; Keller 1909/1913, 176 [translation from German]; for further references, see Eichinger 2005, 84).

Not explicitly as stupid, but at any rate as more stupid than the clever fox, the bear is depicted in a fable by Aesop, in which a bear and a lion fight to exhaustion over a fawn – only to watch in dismay as a fox then carries away the prize.[59]

In summary, it can be said that the bear played a not insignificant role in the Greco-Roman world. As a pest, it occasionally disrupted human life and sometimes even killed human beings. Humans, however, were the greater foe to bears by far: In huge numbers, bears were hunted, captured, and – particularly in Rome – killed or set on humans and other animals for the entertainment of the audience. Humans not only fear, hunt, and torment bears, but they also eat them, heal, clothe, and adorn themselves with parts of them. They invoke the power attributed to the bear in ceremony and cult as well as for magical rituals. They name stellar constellations after it, train it, imitate it in their art, tell stories about it, and turn the bear into an object of their scientific curiosity.

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59 *Corpus Fabularum Aesopicarum* 147. The masquerade of the fable conceals types of human beings and human destinies, of course, so that in fact humans are at the centre of interest instead of bears. Aesop's perhaps somewhat irritating moral is: The fable shows that those get angry with good reason who watch the profit of their labours being carried away by others. A related form of human self-reference probably is the basis of the proverbial phrase not to go looking for the bear's tracks when the bear itself is there already (*Bacchylides*, fr. 6 [after Snell's edition], 6th/5th century BC); here, the universal adage is derived from the bear hunt that in a difficult situation, the crucial facts have to be faced.

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Bears in Early and Middle Byzantine art (330–1204)

By Martina Horn

Keywords: Byzantine art, mosaic pavement, bear hunting, Consular Diptychs, circus games

Abstract: Most Byzantine artefacts that depict bears derive from the Early Byzantine era (c. 330–641), especially the 6th century, and follow Roman pictorial formulas and traditions. The objects largely originate from the regions of the Levant and the capital, Constantinople (present-day Istanbul, Turkey). There are only single, isolated artistic references from the Middle Byzantine period. A manuscript from the 11th century illustrates a cycle concerning the life of a bear. The few visual images of a later date are hardly innovative but instead based on ancient patterns. In general, the natural strength of the bear is often portrayed. Many church pavements in Jordan give an impression of its primeval ferocity and its exoticism as part of the magnificent God-created cosmos, and as a symbol of the Messianic Kingdom of peace. This is in contrast to the creation-theological arguments that usually justify the mastery of men over animals. Men have the know-how to hunt and kill bears, to protect themselves against bears, or to domesticate wild bears. Triumph over the strong bear symbolises the human virtue of fortitude but, even more so, also the heroic power of the emperor, as can be seen from the example of King David. There is pictorial and written evidence that bears were valued both for their excitability and their skill in performing tricks. They were raised in parks and were trained by bear keepers for acrobatic shows to entertain the audiences in Constantinople. The function of bears as guardians against evil is not, or only rarely, present. Byzantine art deals with bears as a dichotomous phenomenon. The imagery reflects admiration for the bear's untamed natural behaviour and at the same time the idea of a human-dominated cultural sphere, where bears are subordinated to the rule of men.

Introduction

The Early and Middle Byzantine epochs include artworks created in the period from the reign of Emperor Constantine I (306–337)[1] to the Crusader conquest of Constantinople (present-day Istanbul, Turkey) in 1204. In the 6th century, under the reign of Emperor Justinian I (527–565), the Byzantine Empire had extensively expanded its territory and penetrated geographic regions far from its capital in Constantinople, encompassing parts of the Italian peninsula, the Levant,[2] the Middle East, and North Africa. This period is distinguished by an exceptional record of artistic patronage and production. Despite numerous beautiful examples from this Early Byzantine period, images of

1 More precisely, from the re-foundation of Constantinople (the former Byzantium) in 330 and the transfer of the imperial seat of the Roman Empire to the new capital.

2 The Levant refers to the Eastern Mediterranean region of Western Asia including present-day Syria, Israel, Lebanon, Palestine, Jordan, and parts of Turkey.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1031–1060 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134377

bears are only of marginal importance in the later periods of visual art. The bear is classified with the species of wild and dangerous beasts and often not emphasised with clarity. Regarding the political zoology, greater significance is assigned to the representation of lions or eagles as symbols of the imperial power of the Byzantine emperors than the imagery of bears.[3]

Maybe this is why there are no modern scholarly works that present a comprehensive overview of the role of bears in Byzantine art, but only studies of single artistic objects, such as the research on the Consular Diptychs or Jordan mosaic pavements. According to the archaeozoological monograph by H. Kroll on animals in Byzantium, the bear did not play a significant role in daily life in Byzantine settlements (Kroll 2010). In T. Schmidt's study on the instrumentalisation of animals in political discourse, there is almost no perception of bears (Schmidt 2020). The following article provides a brief overview of the diverse pictorial aspects that reflect the role of bears, with the main focus on Early Byzantine artefacts (Fig. 1).

The bear in depictions of biblical episodes

There are some images of bears in Byzantine art which are based on Old Testament texts. First, we have various depictions of the creation of the land animals, including the beasts of the earth, on the fifth day of the creation of the world (Gen 1:23–25); for example, the 13th-century mosaics on the Genesis Cupola at the Basilica of San Marco, Venice, interpreted as a revised version of the Late Antique illuminated manuscript, the Cotton Genesis (Ms. Cotton Otho B. VI),[4] illustrate Christ blessing the land animals that are approaching two by two, among them a pair of threatening-looking bears (for an image, see Niero 2001, 258).

Another mosaic on the Genesis Cupola shows Adam giving names to all the livestock and to every beast of the field (Gen 2:19–20), as God has authorised him to do. The two playful and friendly bears among the other wild animals reflect the peaceful nature of the terrestrial Paradise (Fig. 2; see Niero 2001, 263). The 5th-century panel from the ivory Carrand Diptych,[5] showing Adam in Paradise, demonstrates his role as dominator of the paradisiac wildlife. Exotic and wild animals are frolicking around the large, naked figure of Adam, and a little bear is running about his feet and turning its head to the lions next to it. The bear, defined as a creature of God, lives in peaceful paradisiac coexistence with the other animals and at the same time is under the rule of man. The domination and authority of humans over beasts can be explained by their creation in God's image and likeness (Gen 1:26–28).

One of the nine Byzantine silver plates from the Cypriot Lambousa Treasure (dated to 629/630),[6] with scenes from the life of King David, according to the Old Testament narrative in the book of Samuel (Septuagint = 1 Kings), is embossed with the episode of David killing a bear (Fig. 3). The biblical story characterises David as a shepherd who protects his flock against wild beasts, among them lions and bears.[7] The plate represents David wearing a flying cape, his body energetically twisted in

3 For lions and eagles as metaphors for Byzantine rulership, *porphyrogénnētos* (purple-born), imperial authority, and martial virtues, see Schmidt 2020.

4 Generally dated to the 6th century; the fragments of the manuscript, which was largely destroyed in a fire, are today in the British Library, London, UK.

5 Museo nazionale del Bargello, Florence, Italy; for an image see https://www.akg-images.com/C.aspx?VP3=SearchResult&ITEMID=2UMDHURDHJ8W (accessed 29.06.2020).

6 Dated by control stamps; today in the Museum of Antiquities, Nicosia, Cyprus; for the plate, see Leader 2000, fig. 7.

7 1 Sam 17:34: And David said to Saul, Thy servant was tending the flock for his father; and when a lion came and a she-bear, and took a sheep out of the flock, 35 then I went forth after him, and smote him, and drew the spoil out of his mouth: and as he rose up against me, then I caught hold of his throat, and smote him, and slew him. 36 Thy servant smote both the lion and the bear, and the uncircumcised Philistine shall be as one of them: shall I not go and smite him, and remove this day a reproach from Israel? For who is this uncircumcised one, who has defied the army of the living God? 37 The Lord

the direction of the huge bear, seizing the fur between its ears, pressing his knee into its back and swinging out with his right hand to kill it with a tapered knife. The bear is turning its head to David and baring its fearsome teeth. David looks like a mythological hero in an ancient drama. In case of the plate discussed here, his heroic victory over the bear can possibly be associated with the military triumphs of the emperor, Heraclius (610–641), based on his identification as a second King David.[8] The focus lies on the imperial virtue of strength and glory, and the overwhelmed bear symbolises the conquered mighty and dangerous enemy. A marginal miniature in the 9th-century Cludow Psalter (Moscow, Hist. Mus. Ms. Gr. 129d)[9] from Constantinople depicts David as the composer of the psalms (fol. 147v). As a biblical reference to his life, David is shown killing a lion and a bear, grabbing the bear by its ear and hitting it with a stick.

The first page (fol. 1r) of the Christian Topography of Kosmas Indikopleustes (Laur. Plut. 9.28)[10] illustrates David as a shepherd, guarding his flock and looking up to three dogs that are mauling and killing a huge brown bear (Fig. 4; see Anderson 2013, plate I). The bear is lying stretched out on its back, its fore paws are in the air, it is bleeding from deep wounds, and blood is running out of its nose and open mouth. One dog is biting its stomach, another its hindquarters and a third its throat. The inscription reads: "David tending his father's sheep", which is probably reminiscent of Ps 151:1. A direct single combat between David and the bear is not to be seen here. This role as an observer seems unusual for the image of David as a hero. The iconographic formula of this miniature, which has no written accompaniment, perhaps originates from illustrations of classical hunting scenes, which often depict dogs slaying a bear or another wild animal.

The bear in Christian martyrdom episodes

In the collection of the RGZM Mainz are two Roman terra sigillata bowls (dated to 350–430), categorised as African Red Slip Ware (ARS) from the province of Africa Proconsularis (North Africa). Each is appliquéd with two relief figures, a female prisoner bound to a stake behind her and a huge upright standing bear facing backwards.[11] On the first bowl, the bear leaps at the woman, digs its claws into the victim's body and shows its teeth ferociously, but then it turns its head away from the woman (Fig. 5).[12] On the other one, the bear approaches the hoisted female victim from the left with outstretched paws and its head turned backwards (Fig. 6; see Van den Hoek 2013, 428–434; Van den Hoek/Herrmann 2013, 94–105 and figs. 15–16; Stiegemann 1996).[13] Possibly, the two plates depict an ordinary *damnatio-ad-bestias*-episode – the execution of convicts or captives, barbarian prisoners, and condemned criminals by exposing them to wild animals, such as lions or bears, as shown in vivid examples on Roman pottery from the 2th and 3th centuries (for examples, see Van den Hoek 2013, 420–429; Van den Hoek/Herrmann 2013, 94–101). But the hesitancy on the part of the bear does not correspond to the *damnatio* in the traditional sense. A clear change of attitude is notable,

who delivered me out of the paw of the lion and out the paw of the bear, he will deliver me out of the hand of this uncircumcised Philistine. Text from the Septuagint, after https://biblehub.com/sep/1_samuel/17.htm (accessed 29.06.2020).

8 See the discussion in Leader 2000, 413–418: We have no textual evidence in Byzantine sources about the identification of David and Heraclius, but David could generally be used as the ideal type for the Byzantine ruler.

9 State Historical Museum, Moscow, Russia; for image see https://upload.wikimedia.org/wikipedia/commons/a/ad/Chludov_david.jpg (accessed 29.06.2020).

10 Dated to the 10th/11th century, in the Biblioteca Medicea Laurenziana, Florence, Italy; for the codex, see Anderson 2013.

11 Another bowl with an identical motif is in the Römisch-Germanisches Museum, Cologne, Germany; for an image see Van den Hoek/Herrmann 2013, fig. 15.

12 Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany, Inv.-Nr. O.41911.

13 Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany, Inv.-Nr. O.41962.

cruelty has transformed into sympathy for the victim. Can this episode be interpreted as a special kind of Christian martyrdom tradition?

The bear-and-woman-motif and the bear's distraction could be literarily associated with episodes in the *passiones* of female Christian martyrs in North Africa. We know from written sources that Maxima, Donatilla, and Secunda, the three virgins of Tuburga, were executed during Valerian's persecution. When four she-bears were let loose to kill the girls in the amphitheatre, the beasts showed no inclination to harm them; instead they refused to touch them, rolled in the sand and laid down at the martyrs' feet. Saint Marciana Caesariensis of Mauretania, who died in 303, was thrown to some wild bears in the arena. The beasts dug their paws into the girl's breast, but then they meekly retreated.[14] Perhaps, the bowls illustrate how a virgin martyr had been protected from wild bears by divine intervention. One striking argument against such an interpretation might be that only very few Late Antique images of Christian martyrdom by wild beasts are known.[15] The hesitant attitude could also point to the unpredictability of bears that has been documented in literature; they sometimes simply have no desire to kill their victims (for examples see Van den Hoek 2013, 430).

In the Middle Ages, the divine miracle-motif of the bear's sudden tameness is much more popular in depictions of martyrdom episodes. The Church of Hagia Euphemia at the hippodrome of Constantinople has a cycle with fourteen episodes portraying the martyrdom of Euphemia from Chalcedon.[16] Symeon Metaphrastes' *Menologion* (10th century) tells us about the tortures she endured under the reign of emperor Diocletian: Euphemia is led to the arena, but the four lions and three bears there do not touch her, they only lick her feet (for the Greek text, see Halkin 1965, 161). After she has prayed to God for letting her suffer the martyrdom, a she-bear bites her and she dies. This episode is included in the painted *vita*-cycle with *tituli* from her *passio* in the Church of Hagia Euphemia at Constantinople, dating to the late 13th century (Naumann/Belting 1966, 136–139 fig. 44).

The bear on Byzantine church pavements

From the 6th century, the age of Justinian I, there are numerous mosaic floors in Byzantine churches and chapels in the provinces of Jordan, Libya, Palestine, Syria, Arabia, and Greece with representations of daily life scenes, with hunters or farmers, and with exotic and fierce animals.[17] The naves of the one or three-aisled basilicas depict birds, different types of animals and beasts, such as bears or lions, as well as men in combat with or chasing wild animals. The forms and pattern formulae are adapted from the Roman repertoire with similar images, borrowed especially from the pagan floor mosaics in North African Roman villas. The exotic and rural motifs have been transmitted to Christian churches.

In the Church of the Martyrs at Al-Kahdir, Madaba, Jordan (dated to the 6th century), the mosaic pavement of the nave depicts panels with animals under trees laden with fruit. Two bears romp below a date-laden palm tree (Piccirillo 1993, 129–131 fig. 142). The Church of Cosmas and Damian at Gerasa, Jordan (dated to 533), has a mosaic floor in the nave with squares containing different species of animals, and also a row with wild bears shown leaping around (Maguire 1987, 34–36 fig. 41). In the three-aisled basilica at Petra, Jordan (dated to *c.* 550), the north side is paved with mosaics,[18]

14 For the martyr acts and legends of the North African female saints, see Tilley 1996, 13–24.

15 For the discussion about the interpretation, see Stiegemann 1996, 141; Van den Hoek/Herrmann 2013, 101–106.

16 For the iconographic analysis and reconstruction of the frescoes, see Naumann/Belting 1966.

17 For detailed studies on the pavements, see Hachlili 2009; cf. Kitzinger 1951; Maguire 1987; Piccirillo 1993; Zohar 2017.

18 For the entire mosaic pavement, see Hachlili 2009, figs. VI.6–8, for the row of bears fig. VI.7a.

which are composed of the inhabited vine scroll pattern, in which vine tendrils emerge from a vase and form frames for medallions which enclose pairs of animals as well as six human figures. In this central-axial symmetrical composition, the rows alternate with pairs of birds and animals, each in different postures. A basket of grapes is flanked by two bears in dissimilar poses (Fig. 7). One is depicted as ferocious, with an open mouth and bared teeth, whereas its counterpart appears calm in a posture of docility, with an inclined head that represents the ambivalence between the bear's natural savageness and paradisiac peaceful coexistence. The nave of the East Church at Qars-El-Lebia, Libya (dated to 539–540), shows a mosaic floor divided into fifty square panels with pagan and religious motifs, including a multitude of animals, half-human creatures, buildings, and Nilotic scenes.[19] This extensive representation of earth and sea as part of God's creation is composed of various land and water animals. In one field, a huge jumping bear is baring its teeth (Fig. 8). A similar depiction of a huge bear, standing on his hind paws, appears in an inhabited vine scroll on the mosaic pavement in the nave of the Church at Qabr Hiram, Lebanon, dated to the 6th century (see Hachlili 2009, 136 fig. VI.18).

The mosaics portray a representation of the natural world as an image of the whole prosperous earth with its varied inhabitants, with humans and animals, and all things that do creep and fly. In a religious church context, the floor can be understood as an image of God's creation; as a symbol of the richness and variety of His living creatures, including wild beasts, such as bears (for the different means of interpretation, see Hachlili 2009, 286–288). The church donor-inscription in the Theotokos chapel attached to the south aisle of the basilica in Mount Nebo, Jordan (dated to the 7th century), interprets the world as God's donation to man and praises the creator with the acclamation: "O, Creator and Maker of all things, Christ our Lord …" (see Maguire 1987, 49). All creatures, even dangerous animals, such as bears, are under the protection and blessing of God, according to the biblical passage in Gen 1:24–25 concerning the creation and benediction of land-living animals on the fifth day. More than just picturing the terrestrial created world, the mosaics convey the Messianic vision of the celestial Paradise. The prophecy of Jes 11:6–8,[20] which we can read in a Greek quotation in the Acropolis Church in Ma'in, Jordan, dated to 719/720 (see Piccirillo 1993, fig. 312), describes the amicable arrangement between predator and prey animals in future times of salvation in the celestial Paradise, the *filia* (friendship) among all animals in the Garden of Eden.

The bear in hunting episodes (*venationes*)

Many church floor mosaics include the theme of hunters on horseback, or on foot, who are in combat with a bear or another wild beast.

The large, central floor in the old Diakonikon Baptistery at the Memorial of Moses on Mt. Nebo, Jordan (dated to 530), shows four separate rows of hunting and pastoral scenes.[21] In the second register, two men on horses, accompanied by their dogs, are hunting a bear and a wild boar with spears. The huntsman on the left has hit the brown bear in the back with his long spear. The bear is turning its head to the hunter (Fig. 9; see Piccirillo 1993, fig. 169). On Mt. Nebo, in the Church of SS. Procopius and Lot at Mukkayyat, Jordan (dated to *c.* 557), there survives a floor mosaic in the nave with inhabited scrolls, including agricultural scenes with human figures in various rural activities.[22] The scene,

19 Dated by an inscription, see Maguire 1987, 44–48; for more information on the pavement, see Hachlili 2009, 101–109.

20 V. 7: καὶ βοῦς καὶ ἄρκος ἅμα βοσκηθήσονται …

21 Dated by two inscriptions of Bishop Elias; see Piccirillo 1993, 146 and figs. 166, 169, 182; Hachlili 2009, fig. VII.13c.

22 There are three Christian dedication and commemoration inscriptions, see Piccirillo 1993, 164–165 and figs. 201–215, esp. 202; for a further depiction, see Hachlili 2009, fig. VI.11.5; Zohar 2017, fig. 2.

consisting of two medallions, is similar to that in the aforementioned Diakonikon, with the common iconographical formula: A man is striking a huge leaping brown bear with a spear (Fig. 10; see Piccirillo 1993, fig. 202). The north wing floor mosaic of the northern transept basilica at Nikopolis, Epirus, Greece, donated by Bishop Dometios (dated after 550), represents a chasing scene in a frieze with a chain of medallions, alternately filled with hunters and wild beasts (see Kitzinger 1951, figs. 21–22; Maguire 1987, 21–24). Both are each in a separate circular scroll formed by a vine rinceau. One of the hunters is attacking a bear with a long lance. The mortally wounded bear is sticking out its tongue.

In the north aisle of the Church of St. Elias at Kissufim, Negev, Israel (dated to 578), we find a modified pictorial pattern of a hostile encounter between man and bear: A hunter-soldier armed with a huge round shield and a sword is confronting a bear (Fig. 11; see Hachlili 2009, 160 and figs. VII.4; VII.12a).[23] The impression of defense and protection, rather than of attack or combat, predominates this image. The upper chapel of the Church of the Priest John at Khirbat Al-Makhayyat, Mt. Nebo, Jordan (6th century), illustrates a man armed, just as at Kissufim, with a sword and a shield, who defends himself against a jumping bear (see Maguire 1987, 69–72 fig. 79; Piccirillo 1993, 174). Both are depicted in their own inhabited scroll medallions, separated by a rolled acanthus leaf. The hunter does not attack or spear the bear, nor has he overpowered it. Another example of this theme is found in the Church of Deacon Thomas at ʿUyun Musa Valley, Jordan (dated to the 6th century; see Piccirillo 1993, 186–188; Hachlili 2009, figs. VI.10; VII.12d). In the panel above the vine rinceau, a barefooted hunter with a shield and a sword is facing a dangerous wild bear that has bared its teeth (Fig. 12; see Hachlili 2009, fig. VII.12d).

The hunting motif focuses on man's terrestrial rule over creation. Despite their natural weakness, men have the power to protect themselves and have the intelligence to arm themselves against fierce and savage beasts. By these means, hunters cause the bears to fear them. The mosaics demonstrate the cultural superiority of man over the force of the wild animal, the triumph of civilisation over nature. The pictures also emphasise the heroic and glorious nature of hunting. Hunting events were very popular among the upper classes, not only in Roman times, but also in the Early Byzantine area. On the one hand, the episodes are purely decorative and glorify the activities of the ecclesiastical donors, on the other hand they have Christian significance; they symbolise man's dominion over the animals, the biblical theme of the exploitation of nature by humans based on the divine image in man (Gen 1:26–28).

In the Church of the Rivers at Umm Al-Rasas, Jordan (dated to 579 or 594), on the frame of the central nave mosaic, a bear trainer with a sword on his back is holding a brown bear with bowed head by a long rope (Fig. 13; see Piccirillo 1993, 240–214 and fig. 389). His exotic dress, blonde hair and long moustache may indicate that this man is not a native, and perhaps comes from an inner Asiatic country. The portrayal of a man leading exotic and savage animals, such as ostriches, zebras, or bears, on a leash like camels could be interpreted as a demonstration of man's power to dominate and domesticate exotic and wild animals.

The bear depicted in the pavement mosaic discussed above is a local Syrian bear (*Ursus arctos syriacus*), which lived in the higher mountains and forests of Syria, Jordan, Lebanon, and Palestine. The fur of this relatively small species is light brown or straw-coloured, the hair of the whiskers is grey-brown, and it is recognisable by a dark stripe running across its back[24] (for images of this species, see Figs. 7–13).

23 Today exhibited at the Israel Museum, Jerusalem.

24 For further information, see https://en.wikipedia.org/wiki/Syrian_brown_bear (accessed 29.06.2020).

An Early Byzantine brass jug from Budakálasz, Hungary (dated to the beginning of the 6th century),[25] depicts various isolated hunting scenes in bas-reliefs representing combats as a duel between man and animal in a purely dramatic and realistic manner. Four of the friezes show hunters killing bears in different ways (Fig. 14; see Vida 2017, figs. 15–16, 19, 21). On the first relief, a hunter on foot is ramming his lance deeply into a huge bear's throat, and the mortally wounded bear is falling forwards (Fig. 14.1). The next scene is really uncommon: An undressed man is hitting a bear on its head with a cudgel.[26] The bear is sitting in front of him and exhibits a behaviour that is passive and not at all combative (Fig. 14.2). On the third segment, a mounted hunter is thrusting a lance into the back of a powerful bear that is just biting into the neck of a wild boar (Fig. 14.3). On the last relief, an enormous bear, wounded by a deadly lance thrust of a hunter, is standing on its hind legs and lowering its head as sign of defeat. A dog is licking up the blood that is flowing from a big abdominal wound (Fig. 14.4). All bears are depicted in a naturalistic and plastic manner with precisely crafted fur. The jug-scenes demonstrate the *virtus* of the heroic hunter and his glorious triumph over bestial bears as a symbol of imperial power, which also implies the triumph over dangerous enemies.

The bear and its living conditions in Constantinople

The mosaic that once decorated the floors of the Great Palace in Constantinople mostly consists of bucolic, rural, hunting and mythological motifs, further genre scenes and a variety of exotic animals (for the mosaic, dated to the 6th century, now in a preservation hall, see Jobst et al. 1997). One panel shows a group of bears, one of them climbing the branches of an apple tree, another eating an apple from the ground, and a third walking along with bowed head, perhaps also searching for an apple (Fig. 15). The monumental floor mosaic evokes an ideal landscape to please the imperial elite of the royal court. The peaceful picture of feeding and climbing bears refers to a complex symbolism of the peace and harmony that imperial rule brings. But it also can be read as a reflection of the celestial Garden of Eden. The same motif of a bear eating fruit appears on the ivory throne of Archbishop Maximinian in Ravenna (dated to the 6th century), here again being a symbol of paradisiac peace (Fig. 16; see Cecchelli 1936, plate XII).

The family of bears on the Great Palace mosaic looks as if it has been taken from nature's template and inspired by a realistic setting. Literary sources, such as numerous *ekphrasis* or chronicles, give various descriptions of menageries, animal parks and animal farms in the palace area of Constantinople, where wild beasts were kept before performances in the arena (Sevcenko 2002, 75–81). Furthermore, we can read about game parks outside the city where wild animals were fed and trained for entertainment performances and emperors' hunting events (Sevcenko 2002, 69–75). The most frequently mentioned garden spaces are the two suburban parks, the Philopation and the Aretai, and two in the area of the Great Palace, the Mesokepion and the Mangana.[27] We also know the term beast-rearer (*θηριοτρόφος*) from written sources that describe keepers in the parks who feed the animals, especially in the wintertime (Sevcenko 2002, 72 and note 11). Archaeological finds of animal bones in the Theodosian harbour of Yenikapi in Constantinople document the possible transport by sea of bears for the imperial menagerie (for the archaeological excavations, see Kroll 2010, 68–69).

25 The jug was found in an Avar grave (no. 740) during the 1989 excavations; it had been given to a deceased as a burial gift. Today in the Ferenczy Museum in Szentendre, Hungary; for the jug, see Vida 2017.

26 The iconographic model of a naked hero with a cudgel can be deduced from mythologic scenes, such as of Heracles.

27 Today, there are few, if any, surviving remains of these parks. For the literary sources on the parks, see Maguire 2000.

Procopius tells us in his *Anecdota* IX,2 about Acacius, the father of the Byzantine empress, Theodora (*c.* 500–548). He worked as a keeper of animals used in the circus.[28] He was "an adherent of the Green Circus faction,[29] a man whom they called Master of the bears" (*ἀρκοτρόφος*; for Greek text and English translation, see Dewing/Downey 1935, 102–103). Besides the mosaic in the Church of the Rivers at Umm Al-Rasas, Jordan (cf. Fig. 13), we have no Byzantine pictorial testimonies of beast-rearer activities, but we can get the idea from Roman monuments. In the necropolis at the ancient town of Cibyra in Asia Minor, limestone reliefs from the 2nd or 3rd century show a wild bear's life in captivity and how bears were treated by caretakers and *venatores* (Bern/Ekinci 2019, figs. 26–27; 29–30).[30] On blocks C1 and 3a–b, different stages of a *venatio* are depicted – the release of the bears from their cages, various artistic and fighting activities, and carrying the dead animals out of the arena (Fig. 17; see Bern/Ekinci 2019, figs. 26–27, 30). The drawing of the lost piece (block C1) shows a huge cage with wooden slats, probably a sliding fence, and a gabled roof with six compartments. In front of the cage, four bears are playing and scrapping. A fifth upright bear is snapping at two men who are trying to escape, while a third man is hiding under the roof. Block C2 also shows a cage with six boxes and wooden sliding gates from which bears are released to fight in the arena. Another bear is coming out of a kennel, the trapdoor of which an animal-keeper is opening. The bear has the body or parts of an animal in its mouth. There are three other bears; one is standing on all fours while, in front of him, a bear in an upright standing position has a small animal trapped between its forefeet and is biting into it. A third bear is rising up against a *venator* who is trying to escape. In the lower relief-frame, five little bear cubs are play-fighting and frolicking. On blocks C3a–b, the cage is mounted on wheels like a caged wagon. In one of the compartments, a bear is putting its head through the bars of the cage. On the right, there are hunting scenes and animal-keepers carrying dead animals away, among them two bears. One man is pulling a dead bear away by its hind paws, the second bear is lying on its back and two servants are tying its paws together. In the lower border, four bears are romping. Blocks C4–8 depict many *venationes* and different combat-scenes between wild beasts and men; a lot of bears are struggling with *venatores,* biting and attacking the fighters and, furthermore, the combatants are performing tricks, such as turning somersaults[31] over the bears (see Bern/Ekinci 2019, figs. 34, 36, 38, 40, 42). The relief vividly bears witness to the tradition of bloody and dangerous circus and arena games in Roman, but also in Late Antique times. The bear represented strength and power and was one of the main animal figures in the combats. In the age of Justinian and Theodora, the tradition of bear-fights was still alive, as we can read in the *Anecdota*.

The bloody animal-baiting spectacles were first banned by Constantine I (325) and later by Anastasius (499) in the eastern part of the Byzantine empire, but the prohibitions and restrictions were not properly put into effect (Puk 2014, 229, 269–271). Justinian I once again authorised fights with wild animals to be performed on the anniversary celebrations of the inauguration of the consuls (Lehmann 1990, 173; Puk 2014, 271). The Council of Trullo (691/692) determined the penalty of excommunication for bloody animal combats. The huge popularity of the *venationes* is evident in numerous Consular Diptychs (Lehmann 1990, figs. 13–18 ; Puk 2014, figs. 95–97). A pictorial reflec-

28 He probably had the same function as the *usarii,* who cared for the bears in the Roman provinces of Gaul and Germania – bears that were utilised to fight in the circus plays in Rome, see Wamers 2009, 33.

29 Blues and Greens were political and religious factions in the Byzantine Empire in the 6th century. They took their names from the colours worn by the circus charioteers.

30 Today in the Burdur Archaeological Museum (Pisidia, Turkey).

31 The dangerous activity in which men execute somersaults over the backs of wild animals has an old pictorial tradition. The famous Minoan Toreador fresco from Knossos (today in the Heraklion Archaeology Museum, Crete, *c.* 1450 BC) shows acrobats performing somersaults and handstands across the back of a huge and ferocious bull. Here the bull-leaping could be part of an ancient magic-religious cult. For image and description, see https://www.historytoday.com/miscellanies/inside-ancient-bull-cult (accessed 29.06.2020).

tion of the Byzantine hippodrome spectacle, inspired by the performances in Constantinople, can be seen in the 11th-century fresco in the Hagia Sofia in Kiev.[32] The painting portrays the imperial box (*kathisma*), a horse race from start to finish, circus life, musicians and dancers, and a *venatio* with a bear, where a mounted hunter is attacking it with a spear (Fig. 18; see Velmans 1999, fig. 42). Using bears from personal menageries for fighting or hunting spectacles may have continued until the 12th century in the hippodrome in Constantinople (Sevcenko 2002, 76).

However, due to Christian moral concerns and changing social concepts, the focus of the games in the amphitheatre shifted from bloody to bloodless and acrobatic attractions with bears. The Serdica-relief and the late Consular Diptychs[33] from the 6th century document this process. On the marble Serdica-plate in Sofia,[34] we see the common *venatio* depictions with *venatores*, equipped with body belts (*balteus*), puttees (*fasciae*) and bandages on their arms and shoulders. The combatants have mechanical instruments for provoking the bears, such as ropes and brass knuckles (*caestus*). The relief also presents a bear's attack on a *venator* and a bear who is biting a bull in its neck. In addition, innovative acrobatic scenes, performed by bears and showmen are depicted (Fig. 19). Two actors with animal masks use acoustic stimuli, e.g. hammer, anvil and hand drum, to anger and exhaust a small bear sitting on a chair and licking its paws. One bear is jumping up against a huge four-winged wooden bogie, fixed in the ground. Behind the bogie, a man is swinging a rope. These images on the Serdica-relief probably reflect the spectacles in Constantinople. A rare motif on this relief shows a man's fist-fight with a bear.[35] An athlete with boxing gloves is confronting an upright, standing bear. A relief on a marble slab from Malkara (Turkey) also depicts a boxing match between a gladiator and a bear. Another fighter is wrestling with a huge bear[36] (Fig. 20). This confrontation is like a man-to-man combat and can be understood as "a code for defeating prominent enemies heroically" (Oehrl 2013, 307).

The bear in acrobatic games

Five Byzantine ivory Consular Diptychs illustrate the innovative and spectacular preferences in the entertainment genre, the performance of acrobatic tricks and bloodless, but also dangerous games with exotic animals, especially bears. Bears were the preferred animals to carry out these tricks using varied equipment. Three diptychs, produced for the consulate of Areobindus in Constantinople (dated 506), portray pantomimic plays featuring bears on the bottoms of the panels. On the left plate of the piece in Zurich,[37] one athlete is stimulating a huge bear with raised arms and another is attempting to escape from an enraged bear. On the left side a human dummy, carried into the arena, is

32 The fresco was made by Byzantine artists in the 11th century, it decorates the walls of a private turret in the church and the hallway leading up to it, where the prince would host noble guests, see Velmans 1999, 123–124 and fig. 42; Dautermann Maguire/Maguire 2007, 30.

33 The Consular Diptychs originated in Rome as gifts of high-ranking civil elites, commissioned for those who had supported their candidacy. In 476, the imperial power was transferred to Constantinople, and from this point we have diptychs of the East Roman consuls. The bottoms of the panels often depict the circus games which the consuls had to arrange at their inauguration ceremony. The diptychs were used until the end of the consulate under Justinian I in 542.

34 Today in the National Archaeological Museum of Sofia; for the relief, see Lehmann 1990; Puk 2014, fig. 109; normally dated to the 3th–5th centuries; concerning the question of dating see the stylistic and thematic analysis of Lehmann 1990, 146–172; he dates it to the first half of the 5th century (page 172).

35 Plinius reported that an athlete had a real chance of winning a fistfight with a bear (Nat. Hist. 8,130); see Lehmann 1990, 143 und note 13; Puk 2014, VI 252 and note 134.

36 Parts of a grave stele, today in the Archaeological Museum, Istanbul, Inv. 1219 T, dated to the 3rd century. For this subject, see Oehrl 2013; as a further example of a man wrestling with a bear, he mentions a relief on the Sens Cathedral (12th century), Burgundy, France: Oehrl 2013, 306 fig. 15.

37 Schweizer Nationalmuseum-Landesmuseum Zürich, Inv. no. A 3564; for the diptych, see Delbrueck 1929, 110–111 no. 9 (plate 9); Volbach 1976, 32–33 no. 8 (plate 4.8); Eastmond 2010, fig. 1.

used to increase the anger of the bear. Depicted below this, one performer is trying to catch a bear with a swinging lasso. Another actor is hiding behind one of the panels of a partitioned wooden turnstile (*cochlea*), while a bear is unhurriedly pushing against it (Fig. 21; see Delbrueck 1929, plate 9). The Diptych in Paris[38] shows an egg-shaped cage made of wooden sticks protecting the man inside against a bear's angry bites and sharp claws. Underneath, three actors, equipped with rods and slings, are provoking two bears with excited gestures. A human dummy is also used here to provoke the wild beasts (Fig. 22). On the St. Petersburg Diptych plate,[39] there is again a wooden turnstile, the rotation of which excites the bear while, at the same time, the continued motion irritates it and protects the performer against the bear's bites. Next to this scene, an acrobat is attempting to jump, using a bar, over a fiercely upright bear with bared teeth. In the lower register, an actor, high up on a railed bridge-like structure, is provoking a bear who is angrily running up and down under the bar of the construction and trying to attack another performer. Two more men are sitting in the rotating baskets of a carousel, each basket is attached to a stick that can be pivoted back and forth around the axis of the central pole. A bear is jumping furiously against the middle bar (Fig. 23).

Two of the Diptychs of consul Anastasius (dated 517) illustrate similar acrobatic feats with bears. On the now-lost Diptych plate once kept in Berlin,[40] a huge carousel-construction is depicted. Two actors are sitting in large wickerwork baskets, fixed to a big pole by a rope, which allows them to circulate and to swing up and down in order to provoke the towering bear. Another performer is beating it with a stick in order to increase its rage. Below this scene, there is again a bear-jumper with a cane (Fig. 24; see Delbrueck 1929, plate 20). The ivory plate in Paris[41] shows two wooden turnstiles with bears angrily sneaking around them, and performers who are annoying and persecuting the bears with looped ropes (Fig. 25). A Byzantine marble relief now kept in St. Petersburg (dated to *c.* 500)[42] illustrates circus scenes with two acrobats performing somersaults over bears who are leaping up to grab them, and a mounted fighter struggling with two feral bears (Fig. 26). A fragment of an illuminated papyrus,[43] kept in the British Library, depicts a performance in the arena comparable to those shown on the diptychs. A heavily muscled, infuriated brown bear is leaping at a pair of human legs above him. The cause of its incitement is the piece of violet cloth in the upper right corner (Fig. 27). The best trick for the actor to escape the exasperated bear was a summersault over its back by means of a pole (*contomonobolon*),[44] as seen on the Berlin and St. Petersburg Diptychs. The two plates of the Diptych in the Louvre (dated to *c.* 400)[45] with depictions of Roman *ludi* also demonstrate how wild bears were stimulated by swinging cloths to attack the *venator* (Fig. 28).

The ferocity and savagery of the huge and strong bears awaken fear and respect among the spectators, and at the same time the skill and mastery as well as the risky and dangerous performance of the protagonists evoke their admiration. Based on Roman tradition, in Early Byzantine times bears were mainly used for the exotic amusement of the audience.

38 For the diptych, see Delbrueck 1929, 112–113 no. 11 (plate 11); Volbach 1976, 33 no. 10 (plate 5.10).
39 For the diptych see Delbrueck 1929, 114–115 no. 12 (plate 12); Volbach 1976, 33–34 no. 11 (plate 5.11).
40 For the diptych, see Delbrueck 1929, 127 no. 20 (plate 20); Volbach 1976, 35–36 no. 17 (plate 8.17).
41 For the diptych see Delbrueck 1929, 131 no. 21 (plate 21); Volbach 1976, 36–37 no. 21 (plate 9.21).
42 For the relief, see Sevcenko 2001, 122 note 10.
43 The dating of papyrus 3035 (3rd to 6th century) is uncertain. It may have originated in Egypt. For the manuscript, see Weitzmann 1979, 95–98 no. 86.
44 See Delbrueck 1929, 76; Lehmann 1990, 143 with reference to the Anthologia Graeca 9, 533.
45 Possibly of Gallic origin; for the diptych, see Delbrueck 1929, 221 no. 57 (plate 57); Volbach 1976, 53 no. 58 (plate 31.58).

Taming a bear

The existence of tamed bears, which were raised and trained in the parks in Constantinople, is documented by a written source that mentions a gift sent by the Byzantine emperor, Michael VI (1056–1057), to Fatimid Caliph al-Mustansir bi-Allah (see Sevcenko 2002, 82 and note 62). Among other exotic animals, bears that played musical instruments were presented to the Caliph. Such a bear, sitting on a stool and playing a string instrument, is shown on a fresco in the audience hall of the bath complex in the Umayyad Palace in Qusayr Amra, Jordan (8th century; Fig. 29; see Piccirillo 1993, 353).

At the imperial court in Constantinople, in the age of Justinian, exhibitions of domesticated animals (*θηρίων θέαι* or *θεατροκονύγιον*), parades and shows with bears, performed with specially trained animal coaches, are described in the literature (see Puk 2014, 281). Concerning the presence of dancing bears in Byzantium, we have no pictorial sources that show bears performing this action, only some oil ampullas in form of a bear, which may be Roman or Early Byzantine (3rd or 4th century). There are three bronze vessels, each shaped like a dancing bear, probably used for oils or ointments for bathing (Fig. 30). At one of them, kept in the Cleveland Museum of Art, the bear wears a massive collar with a round opening, probably to fasten an iron chain (Fig. 30.1). In the Museum of Fine Arts, Boston, the bear that forms the ampulla has straps around its stomach and between its forelegs to indicate a harness, which could be a reference to a domesticated dancing bear (Fig. 30.2). The third vessel, kept in the Metropolitan Museum, New York, shows a heavy twisted rope around the neck of the bear and an iron chain attached to the collar's circular hole (Fig. 30.3). The church acts of the Council of Trullo (691/692) emphasise the problem of the captive bears' treatment by men in *canones* 61: "[…] be subjected to the canon for six years. And to this penalty they also should be subjected who carry about she-bears or animals of the kind for the diversion and injury of the simple […]".[46]

The bear's life

The illuminated manuscript of Pseudo-Oppian's *Cynegetica* in Venice (Cod. Gr. Z. 479, dated to *c.* 1060), includes several animal and hunting depictions that were possibly copied from an earlier illustrated codex. The Venice manuscript is based on the text of Pseudo-Oppian's *Cynegetica*, dedicated to Caracalla (211–217).[47] The 11th-century illustrations show man's triumph over bears by chasing and killing them, but they also portray hunters who are mortally wounded by the bears they have pursued. Successful bear hunting can be achieved by active or passive techniques, with bow and arrows (fols. 4v; 44r), with hunting dogs and sticks (fol. 64v), with spears, or with net traps (fols. 20r; 56v; 40r; 65v; Spatharakis 2004, figs. 41, 117, 132–133; see Fig. 31.2–4). On fol. 20v, an overturned hunter is lying on the ground and a huge, furious bear is pouncing on him. Unable to move, the victim is trapped and the bear is mauling him by biting and scratching (Fig. 31.1). On fol. 56v, a hunter is pinned down on his stomach by the enormous weight of a bear that has already been caught in a bag-net hanging from a stick between two trees[48] (Fig. 31.2). These illuminations demonstrate the potential risk of injury or death for the bear-hunters.

46 See Troianos 1990, 45 with the Greek text: τοὺς τὰς ἄρκτους ἐπισυρομένους [...] πρὸς παίγιον καὶ βλάβην τῶν ἁπλουστέρων [...].

47 Biblioteca Marciana, Venice, Italy. It has been suggested that the illustrations are copied from an illuminated Late Antique codex of the *Cynegetica* or another, perhaps Aristotelian, source; for the manuscript, see Sevcenko 2001; Spatharakis 2004; the poem *Cynegetica*, dedicated to Caracalla, was written in the 3rd century; see also Williams 2018, 474 note 1.

48 The same subject is seen on an ivory casket from the 11th century in the State Hermitage Museum, St. Petersburg, Russia – a warrior has fallen down and is besieged by an attacking bear; for a depiction see Sevcenko 2001, fig. 9. For the bear as a dangerous enemy, see Oehrl 2013, 304–305.

Other themes are the bear's *eros*,[49] the cubs' birth, and the bear's natural superiority over humans (Spatharakis 2004, figs. 92–95; see Fig. 32). The verses III, 139–158 of the *Cynegetica* describe the lives of wild bears (*ἄρκτοι)*: Bears are "a deadly race with crafty wit" (Spatharakis 2004, 129). Their roar is terrible, and their hearts are fierce. This is followed by some negative comments about the lechery of female bears: The she-bear incessantly desires mating and the pleasures of union, even while still pregnant. When the day of birth arrives, "she puts pressure on her womb and does violence on the goddesses of birth" (Spatharakis 2004, 129), so that she can further indulge in lust. On the miniature fol. 44r top, there is an illustration based on this text – a she-bear is sitting in a tree and, with her left paw, she is pressing her womb from which blood is flowing down. A hunter is aiming at her with his bow and arrow. Next to her, three little bears are depicted, one is walking and the others are climbing in the trees and eating leaves and grapes (Fig. 32.1). On the left side of fol. 44r bottom, there is a bear in an upright stance next to a tree, his open mouth may refer to the "terrible roar" mentioned in the text. To his right, two bears are lying on top of each other and copulating to express their passion for sexual activity (Fig. 32.2). The verses 159–169 tell us about the rearing of the she-bear's cubs, which are half-formed and not yet fully developed after birth. She has to lick her whining offspring with her tongue, in order to shape and to finish it.[50] On fol. 44v, a female bear is standing on all fours in a cave and licking one of her partially shapeless cubs (Fig. 32.3). Verses 170–182 describe the survival of a female bear in wintertime. Her hair is shaggy, and she is hiding in a cave. Instead of eating she is licking her paws. On fol. 45r, the hibernating of a bear, lying in a cave, is depicted (Fig. 32.4).

Basil of Caesarea (4th century), in his homily 9 of the *Hexaemeron*, describes the bear's nature as sluggish, but also sly and very secretive, and he emphasises the bear's ability to hibernate in the freezing cold.[51] Basil interprets the bear's natural instinct to survive as a wonder that reveals the wisdom of the divine Creator. The *Cynegetica*-codex studies the bear's natural animalistic strength, its power to survive and its advantages over humans: The bear's sexual instinct is not burdened with the complexities of the human experience of love and psychological suffering, and childbirth takes place without assistance, without need of midwifery. The manuscript points out the reciprocal phenomenon of human and animal power and weaknesses, the strong interdependency between man's cultural hegemony and the bear's natural force.

The bear's protective function

Bone finds of wild animals document hunting practices in Byzantine villages (cf. Kroll 2010). In the settlements of Iatrus Krivina, Nicopolis ad Istrum (present-day Bulgaria), Pontes (present-day Serbia), and Sagalassos (present-day Turkey), sporadic skeletal elements from brown bears (*Ursus arctos*) from the 6th century have been excavated (Kroll 2010, 53–54, 77, 198). Bears were valuable; they were kept for hunting in parks and the circus *venationes*. But, in the case of Sagalassos, for example, the bear bones might be explained in the context of a fur trade (Kroll 2010, 85). We know about the use and the high reputation of bear skins from the historian Ioannis Skylitzes (Thurn 1973, 280). According to his *Synopsis Historion* 22 (dated to the late 11th century), Emperor Nikephoros II

49 For the theme of animal love in the *Cynegetica*, see Williams 2018.

50 This idea that bear cubs were born as shapeless lumps of flesh and had to be licked into shape by their mothers is found in many ancient sources, including Aristotle and Pliny the Elder; see Spatharakis 2004,132.

51 For the text, see https://www.newadvent.org/fathers/32019.htm (accessed 29.06.2020): "The bear has a sluggish nature, ways of its own, a sly character, and is very secretive; therefore, it has an analogous body, heavy, thick, without articulations such as are necessary for a cold dweller in dens."

Phokas (963–969) used to sleep ascetically, wrapped only in a bear skin, on the floor of his palace, and he took the bear skin with him on his campaigns. He got the fur as a gift from his uncle, the Holy Monk, Michael Maleinos, who had worn it himself. The bear skin is considered as protective and as a lucky charm for the owner and, in addition, it is thought to transmit the bear's strength to the wearer.

The depictions of fierce bears and their prey were also used to visualise the bear's natural force as a magical symbol of superiority over enemies and protection against evil. In the carving on the wooden door panel of the Church of St. Nicholas Bolnichki at Ohrid, Macedonia, Bulgaria,[52] two bears, raptors, and warrior saints defend the entryway as gatekeepers (Fig. 33). The bears, devouring their prey, symbolise the annihilation of evil. The wild creatures' power can thus adopt an apotropaic function which makes them guardians of church entrances.

Summary

The depictions of bears in Early and Middle Byzantine art can be put into sacred as well as into secular contexts. The Old Testament stories describe the bear as a creature blessed by God, but also justify the God-given power of man to domesticate it. In the episodes of King David, the bear functions as a symbol of strength, and David's victory over it constitutes his mighty power and his martial virtues. These heroic qualities serve as an ideal for the Byzantine emperors. Visual sources of Christian martyrdom underline the bear's ferocity and dangerous nature for humans, and at the same time its wayward character. The Byzantine 6th-century church pavements in Syria and Jordan portray the bear as a part of God's creation and as a symbol of the Messianic kingdom and the paradisiac peace. Hunting scenes emphasise man's dominion and mastery of wild beasts, such as bears, and further underline the heroic aspect of killing dangerous animals. In Constantinople, bears were kept in animal parks for aristocratic hunting events and performances in the arena. The Consular Diptychs from the 6th century show, apart from the *venationes*, also bloodless spectacles that consist of acrobatic tricks using equipment such as wooden turnstiles or rotating baskets. It is possible to train bears for these exiting games because they are easy to provoke by acoustic and mechanical stimulation. Furthermore, the savage nature of the huge and powerful bears awakens fear among the spectators, and at the same time admiration for the actors' skill and courage. The circus games with bears, on the occasion of the inauguration of the consuls, were aimed at enhancing the imperial reputation of the Byzantine elite. The aspect of taming bears for dancing performances may be testified to by some oil ampullas in the form of a bear with a collar, harness, and rope. In Pseudo-Oppian's *Cynegetica*, there is a pictorial cycle about the bear's life. Besides various practical instructions for hunting bears, the manuscript accentuates the bear's natural strength and its instincts that, being better than those of man, help him to survive. Some examples indicate the apotropaic and protective function of the wild bear's power against evil, which can be explained by man's respect for its natural aura of strength. All pictorial and written sources demonstrate a strong interdependency between man's hegemony and the bear's ferocity, between nature and culture, between the bear's awesome power and man's intelligent but sometimes abusive superiority.

52 Dated to between the 12th and 14th centuries, today in the National History Museum at Sofia; for an image see Dautermann Maguire/Maguire 2007, fig. 64.

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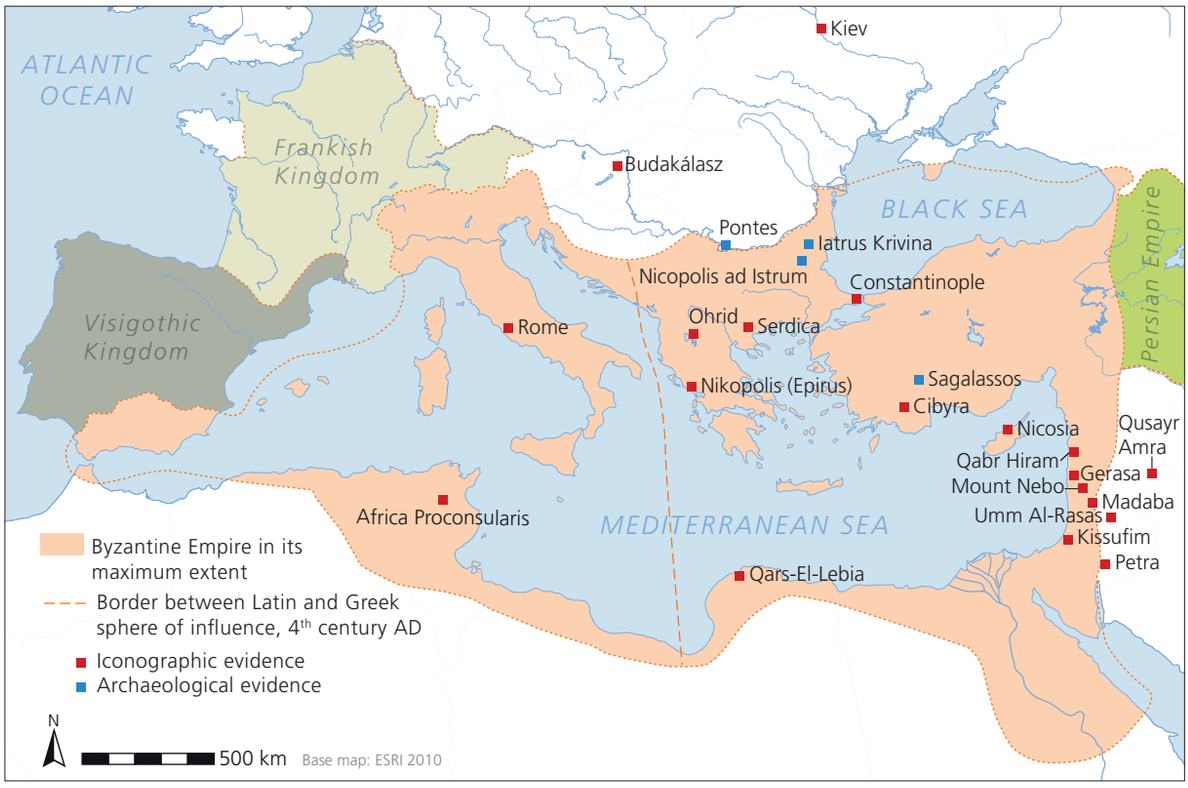


Fig. 1. Sites mentioned in the text (map GIS department, ZBSA, Schleswig).



Fig. 2. Adam naming the animals. Mosaic, Genesis Cupola, Basilica of San Marco, Venice, Italy, 13th century (© Mondadori Portfolio/Electa/S. Anelli / Bridgeman Images).



Fig. 3. David killing a bear. Silver plate, Lambousa Treasure, Museum of Antiquities, Nicosia, Cyprus, 629/630 (© akg images, A. Held).



Fig. 4. David and the bear. Manuscript of Christian Topography by Kosmas Indikopleustes (Laur. Plut. 9.28), fol.1r, 10th–11th century (© Biblioteca Medicea Laurenziana, Florence, Italy).



Fig. 5. Bear and martyrdom. Terra sigillata bowl from North Africa, Römisch-Germanisches Zentralmuseum Mainz, Germany, 350–430 (© Römisch-Germanisches Zentralmuseum, photo Lübke & Wiedemann, Leonberg [ehemals Stuttgart]).



Fig. 6. Bear and martyrdom. Terra sigillata bowl from North Africa, Römisch-Germanisches Zentralmuseum Mainz, Germany, 350–430 (© Römisch-Germanisches Zentralmuseum, photo Lübke & Wiedemann, Leonberg [ehemals Stuttgart]).



Fig. 7. Bears. Floor mosaic, Early Byzantine basilica, Petra, Jordan, c. 550 (after Fiema et al. 2001, 312, Section 12; © The American Center of Research [ACOR], Amman, Jordan).



Fig. 8. Bear. Floor mosaic, East Church, Qars-El-Lebia, Libya, 539–540 (© temehu.com).



Fig. 9. Bear and hunter. Floor mosaic, Diakonikon-Baptistery, Memorial of Moses, Mt. Nebo, Jordan, 530 (after Piccirillo 1993, fig. 169; © The American Center of Research [ACOR], Amman, Jordan).



Fig. 10. Bear and hunter. Floor mosaic, Church of SS. Procopius and Lot, Mukkayyat, Mt. Nebo, Jordan, c. 557 (after Piccirillo *1993, fig. 202; © The American Center of Research [ACOR], Amman, Jordan).*



Fig. 11. Bear and hunter. Floor mosaic, Church of St. Elias, Kissufim, Northern Negev, Israel, 578 (© The Israel Museum, Jerusalem, Israel / Bridgeman Images).



Fig. 12. Bear and hunter. Floor mosaic, Church of Deacon Thomas, ʿUyun Musa Valley, Jordan, 6th century (after Hachlili *2009, col. pl. VII 1d; photo M. Picirillo; © Studium Biblicum Franciscanum [Israel], Photographic Archive).*



Fig. 13. Bear and bear trainer. Floor mosaic, Church of the Rivers, Umm Al-Rasas, Jordan, 579 or 594 (after Piccirillo *1993, fig. 389; © The American Center of Research [ACOR], Amman, Jordan).*



Fig. 14. Hunting episodes. Brass jug from a grave in Budakálasz, Hungary, 6th century (© Ferenczy Museum, Szentendre, Hungary; photo B. Deim).



Fig. 15. Bears. Floor mosaic, Great Palace Mosaics Museum, Istanbul, Turkey, 6th century (© Universal Images Group / Bridgeman Images).





Fig. 16. Bear. Ivory throne of Archbishop Maximinian, Museo arcivescovile, Ravenna, Italy, 6th century. The bear is depicted on the back of the throne. 1: Full view; 2: Detail (© Archiepiscopal Museum of Ravenna, Italy; Opera di Religione della Diocesi di Ravenna).



Fig. 17. Bears in the arena. Limestone reliefs from Cibyra, blocks C 1, C 2 and C 3a–b, 2nd or 3rd century (drawing C. Golze, after templates; Burdur Archaeological Museum, Pisidia, Turkey).



Fig. 18. Venatio. *Fresco, Church of Agia Sofia, Kiev, Ukraine, 11th century (© Saint Sophia of Kyiv Cathedral, Ukraine).*



Fig. 19. Venationes. *Marble relief-plate from Serdica, Bulgaria, 6th century (National Archaeological Institute with Museum at the Bulgarian Academy of Science [NAIM – BAS]; photo V. Petrov).*



Fig. 20. Boxing and wrestling with a bear. Marble relief-slab from Malkara, Turkey, 3rd century (Archaeological Museum, Istanbul, Turkey; © akg-images, photo E. Lessing).



Fig. 21. Acrobatic games with bears. Ivory Consular Diptych of Areobindus, 506 (© Schweizer Nationalmuseum-Landesmuseum, Zürich, Switzerland, Inv.-Nr. A-3564).



Fig. 22. Acrobatic games with bears. Ivory Consular Diptych of Areobindus, 506 (Musée national du Moyen Âge [Musée de Cluny], Paris, France; © bpk / RMN / Grand Palais / photo Th. Ollivier).



Fig. 23. Acrobatic games with bears. Ivory Consular Diptych of Areobindus, 506 (The State Hermitage Museum, St. Petersburg, Russia; © The State Hermitage Museum, photo V. Terebenin, D. Sirotkin).



Fig. 24. Acrobatic games with bears. Ivory Consular Diptych of Anastasius, 517. Lost, formerly Antiquarium, Berlin, Germany (after Delbrueck *1929, plate 20).*



Fig. 25. Acrobatic games with bears. Ivory Consular Diptych of Anastasius, 517 (© Bibliothèque nationale de France, Paris, France).



Fig. 26. Circus scenes with bears. Marble relief, c. *500 (© The State Hermitage Museum, St. Petersburg, Russia; photo V. Terebenin, D. Sirotkin).*



Fig. 27. Circus scene with a bear. Papyrus 3035, 3rd–6th centuries (© British Library Board / Bridgeman Images).



Fig. 28. Games with bears. Ivory Diptych, c. 400 (© RMN-Grand Palais [musée du Louvre], Paris, France; photo J.-G. Berizzi).



Fig. 29. Musician bear. Fresco, Umayyad Palace, Qusayr Amra, Jordan, 8th century (© Museum With No Frontiers [MWNF], Discover Islamic Art).



1



2



3

Fig. 30. Bronze bear-shaped vessels. 3rd or 4th century. (1: © Cleveland Museum of Art, Ohio, USA, purchase from the J. H. Wade Fund / Bridgeman Images; 2: © Museum of Fine Arts, Boston, USA, gift of Burlon Y. Berry 62.1203; 3: © Metropolitan Museum, New York, USA, Edith Perry Chapman Fund, 1966).



Fig. 31. A bear's life. Four folios from the manuscript of Pseudo-Oppian's Cynegetica, c. *1060, from above: fol. 20v bottom; fol. 56v; fol. 64v; fol. 65v (© Biblioteca Marciana, Venice, Italy; Marc. Gr. 479).*



Fig. 32. A bear's life. Four folios from the manuscript of Pseudo-Oppian's Cynegetica, c. *1060), from above: fol. 44r top; fol. 44r bottom; fol. 44v; fol. 45r (© Biblioteca Marciana, Venice, Italy; Marc. Gr. 479).*

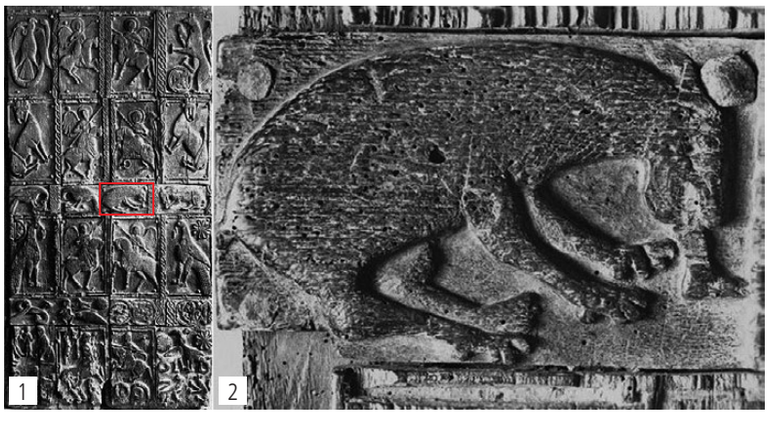


Fig. 33. Wooden door with bears. Church of St. Nicholas Bolnichki, Ohrid, Bulgaria (12th–14th century 1: Full view; 2: Detail (© National Museum of History, Sofia, Bulgaria, inv. no. НИМ29339).

Further reading: Bears in a broader perspective



The figurine from Wray, possibly a shaman who wears a bear costume. Hopewell (100 BC – AD 500), Newark Earthworks, Licking Col, Ohio, USA (see Hull, this volume; drawing by A. C. Lange, after a template).

The role of bears in the Late Bronze and Early Iron Ages in southern Germany, with a focus on the Hallstatt period

By Melanie Augstein

Keywords: Urnfield period, Hallstatt period, bear remains, hunting trophies, amulets/apotropaia, status indicators

Abstract: In this article, bear remains are examined particularly in the context of Late Bronze and Early Iron Age settlements and especially in burial contexts. Although these periods represent "domestic animal periods", evidence of bears is found sporadically but regularly in the archaeological record. This evidence consists of both unworked and worked bear teeth and claws, which raises the question why these particular body parts were important to humans. The field of interpretation ranges from hunting trophies to amulets/apotropaia and status indicators. However, the few finds from contexts that can provide information on the meaning and significance of bear remains in relation to age and gender of the people equipped with them are very varied and (too) few in number.

Introduction[1]

The bear is undoubtedly an impressive predator, whose face everyone can visualise – even though most bear species in the wild in central European latitudes have long ceased to exist, or exist only as relic populations. The (second) last bear in Germany was shot in the Upper Bavarian town of Ruhpolding in 1835. Only twice since then – in 2006 and 2019 – has the brown bear (*Ursus arctos*) tried to reinhabit his old home in Bavaria. In 2006, a so-called "problem bear" named Bruno achieved sad fame as his visit ended fatally; he was pursued and finally shot dead. As a consequence of this difficult human-animal relationship, real bears are more or less only known from zoos – but our everyday lives are permeated by bears. Almost everyone has had a teddy bear in their childhood, has read "Winnie-the-Pooh", eaten Haribo Gold Bears, or knows bears from fairy tales and legends.[2] Ursa Major and Ursa Minor are amongst the most well-known constellations in the northern hemisphere (cf. Künzl, this volume), and also in heraldry there are numerous images of bears (cf. e.g. the coat of

1 I am indebted to Oliver Grimm for inviting me to contribute to this publication. I had my first "encounter" with bears at the Lower Saxony State Museum recording old finds from the Late Pre-Roman and Early Roman Iron Age burial ground of Nienbüttel. While perusing one of the few recorded cremation remains from a bronze urn, which was said to contain no grave goods except for a piece of so-called urn resin, seventeen calcinated bear phalanges unexpectedly emerged (Augstein/Karlsen 2019, 232 fig. 9).

2 The bear plays a more or less central role in various fairy tales by the Brothers Grimm, such as in "Bearskin", "The Willow-Wren and the Bear", "The Two Brothers", "Snow White and Rose Red", or "The Clever Little Tailor" (https://www.grimmstories.com/en/grimm_fairy-tales/index; see also Hirsch, this volume).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1065–1090 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134378

arms of Berlin or Bern). And finally, fans of the fantasy series "Game of Thrones" are sure to know House Mormont of Bear Island.

The human-bear relationship is in fact as old as humankind. Bears were (and are) hunted for their fur and sometimes for their meat,[3] but they also have a highly symbolic connotation (cf. Brunner 2010). Probably because of their size and strength, their physiognomy and the way they move – especially the ability to stand upright and thus appear human-like – bears play an important role in mythology and in the bear cults of various cultural groups.[4] In the following, the remarks on the cultural significance of the bear refer to a narrowly defined spatial context – southern Germany in the sense of the Alpine foothills, especially today's Free State of Bavaria, the setting of Bruno's last showdown. Despite the fact that this area has been involved in numerous contact and communication networks through the ages, it has its own cultural character and is therefore suitable for such an overview. In addition, the state of research and publication can be described as positive. At the same time, this focus, which is also oriented towards modern borders, should not be interpreted too radically. Whenever appropriate, finds from the neighbouring regions are included (Fig. 1). The temporal focus of this study is on the Hallstatt period, but there will be perspectives on the previous Late Bronze Age/Urnfield period as well as on the following Latène period (cf. Table 1).

The attempt to reconstruct human-animal relations

Animals have always played an important role for humans. This is also true for prehistoric times. This importance has been proven archaeologically in all areas of life, in settlement contexts as well as in sepulchral and non-sepulchral ritual contexts. They are thus culturally connoted – and this applies not only to animals that have been bred and modified in appearance and attributes, but more generally to animals that are given a certain meaning by humans. Here, prehistoric archaeology is faced with the problem of having to build a bridge between the "material" and the "non-material" worlds. Actions and attributions of meanings that were once extremely complex can only be grasped at from material traces alone. The question arises as to what extent conclusions can be drawn about complex phenomena such as social structure, political organisation, or worlds of belief and symbols on this basis. This also applies to the reconstruction of human-animal relationships as historically constructed, spatio-temporal and socially specific phenomena. In the context of Human-Animal Studies, animals are understood as historical actors with their own agency (cf. Roscher 2012; Petrus 2015). Human-Animal Studies see themselves as explicitly interdisciplinary, and for this reason they can also be of importance for archaeological research. One question is how animal history should be understood theoretically and methodologically. This debate includes the question of sources that can be used to describe animals historically (Roscher 2012, 8) – but, so far, Human-Animal Studies have only dealt sporadically with antiquity (ibid., 5; cf. Petrus 2015, 158). Archaeozoology brings together both Human-Animal Studies and Prehistoric Archaeology, as it relates to questions of the materiality of animals, of where and how their physical remains (such as bones, feathers, fur, etc.) can be found, and what conclusions can be formed about human societies and their actions and practices on this

3 Despite its nutritional value, bear meat was rarely consumed in many periods and cultures (Schmölcke et al. 2017, 910).

4 Callisto, an attendant nymph of Artemis, the goddess of the hunt, was seduced and made pregnant by Zeus, whereupon Artemis turned her into a she-bear. In order to prevent Callisto from being killed in the hunt, she was transferred to the sky as the constellation of Ursa Major, the Great Bear (Brunner 2010, 22). The bear also plays a role in Celtic mythology and in Celtic traditions – the (supposed) evidence, however, can be found in particular in the southern and eastern Gaulish and Alpine regions or in the Insular Celtic area and is based in part only on linguistic considerations (cf. Sjöblom 2012). Therefore, "the actual significance of the bear and the beliefs connected with it are not easy to trace" (Sjöblom 2012, 77; cf. Schmölcke et al. 2017, 902).

foundation (Roscher 2012, 4). So, how can one reconstruct the role of the bear in relation to humans in prehistoric contexts, meaning contexts that are characterised by the absence of written sources? In these cases, bears can only be identified if they have left material traces. These can consist of themselves, i.e. their remains, in the form of bones, teeth, claws, or fur, but they also include images.

Bears and the world of the living

Animal bones from settlement contexts should not only be seen from a functional perspective,[5] but on the whole they can mostly be regarded as being representative of the nutritional practice of a group of people (Von den Driesch 1993, 126; Müller-Scheessel/Trebsche 2007, 84). Against this background, let us now take a look at the established record in our chosen area, which starts with the Urnfield Culture (*c.* 1200–800 BC). If one looks at the range of animal bones, agricultural animals such as cattle, sheep, goats and pigs, which have been recorded since the Neolithic, also dominate the spectrum in the Bronze Age; additionally, the horse increased the range of livestock (Falkenstein 2009, 153, 156), while wild animals only played a subordinate role. The proportion and composition of wild animal bones in settlements can also be traced back to the landscape and the environmental impact of humans. In any case, hunting seems to have lost much of its importance in central Europe during the Bronze Age (Jockenhövel 1994, 35; Falkenstein 2009, 152). According to Jörg Schibler and Jacqueline Studer, the rare but regular finds of bear skulls and foot bones in the Swiss wetland settlements point to bear skins inside the houses (Schibler/Studer 1998, 188 fig. 77, cited after Falkenstein 2009, 152). For the southern German foothills of the Alps, there also is isolated evidence for the presence of the bear from settlement contexts. In the lower occupation layers of the Achalm, a hilltop settlement in the northern foreland of the central Swabian Alb near Reutlingen (Baden-Wuerttemberg), which dates to the Late Urnfield period (Wilk 2019, 135), two brown bear bones (metacarpus IX and phalanx I ante.) were found (ibid., 151, 174 tab. 49). Hunting in general was of minor importance – at least for the supply of the residents (ibid., 157). Wild animals also played a very insignificant role in the Bronze and Iron Age settlement on the Kiabichl in Faggen (Tyrol; Tecchiati 2012, 21), and this applies once again to the bear – only a brown bear tibia was found here (ibid., 62). Pierced bear claws, as they are also occasionally known from settlement contexts from the Urnfield period, however, have a distinct artefact character. A pendant made from a bear's claw comes from the settlement near Graben in Swabia (Dietrich/Sorge 1992, 76), and pierced bear teeth were found in Mörigen on the southern bank of Lake Biel in Switzerland (Bernatzky-Goetze 1987).[6] One of the most interesting new finds is certainly the one from Erding (Upper Bavaria), where an extraordinary ensemble of objects came to light in pit 1733. In the southern half of the pit there were a small bronze ring, a bronze utensil with flattened ends, a badly-preserved bronze wire mesh and a dovetail-shaped pendant (Biermeier/Kowalski 2010, 26 with fig. 54), while at the western edge of the pit a vessel was found in which, among other things, a Neolithic stone axe, a stone ball and a bronze hook had been deposited; further, fragments of several miniature vessels were found in the filling (ibid., with figs. 55 and 56). Among the animal bones, a left rear rabbit paw and a left rear wolf paw came to light; also interesting is a perforated pig tooth and the same from a bear (ibid., 26, 27 fig. 57). It is, in particular, the combination of the objects that places the Urnfield period

5 Beech (1995, 169) points towards the fact that archaeozoologists in central Europe tend to analyse animal bones in terms of subsistence, consumption and economic practices, while the symbolic and ritual component is often faded out.

6 Bernatzky-Goetze (1987, 19) mentions two brown bear teeth in addition to a radius. Presumably, the teeth are the two objects with the numbers 9 and 10 on plate 116. The species are not specifically mentioned in the table references (ibid., 77, 79 tab. 4) nor in the table directory (ibid., 172).

ensemble in a ritual context, and they have thus been interpreted as the paraphernalia of a shaman (ibid., 27).

If one wanted to summarise the diffuse impression that the few finds are able to convey, one could say that there are isolated, individual finds of bear bones that are difficult to interpret; it cannot be judged with certainty whether they indicate bears as a source of meat or bear skins as a part of the furnishing of buildings (ultimately, both kinds of use can hardly be separated from each other).

The fact that wild animal bones are rare, and also that hunting in the area of research did not play an essential role in the subsequent Hallstatt period (e.g. Torbrügge 1979, 189), has been confirmed by more recent studies. Juliane Stadler dealt primarily with the question of food goods, in particular meat goods in graves from that period (*c.* 800–450 BC), but she also included animal bones from settlement contexts as a reference (Stadler 2010). The picture is dominated by domestic animals such as cattle, sheep/goats and pigs (cf. Müller-Scheessel/Trebsche 2007); wild animals are again only an exception (Stadler 2010, 78).[7] Among the wild animal bones from the excavations in 2004 and 2005 at the Late Hallstatt hilltop settlement on the Göllersreuther Platte on the southern Franconian Jura, only 0.1 % of the animal bones – that is, one single artefact and, interestingly, the only worked bone artefact in the settlement, namely a tooth that could have been worn as a pendant (Schatz 2006, 6, 12) – could be assigned to the brown bear (ibid., 7 fig. 2; Schussmann 2009, 99 fig. 13).[8] This suggests an open landscape with noticeably decreasing forests, which will not have offered an ideal habitat for the bear (Schatz 2006, 1, 14; Schussmann 2009, 98). The following Early Latène period is culturally closely interlinked with the Hallstatt period; burial grounds as well as settlements are often occupied across the "epoch borders". Bones from at least three and possibly nine bear individuals – if the occupation layers are separated – come from the Hallstatt and Early Latène hilltop settlement of Eiersberg (Lower Franconia).[9] Klaus Kerth and Anke Müller-Depreux have dealt with the quantity of wild animal bones within certain types of settlement (Kerth/Müller-Depreux 2004). They noted that only a few settlements had a significantly increased proportion of wild animals. Reference should be made here explicitly to Niedererlbach (Lower Bavaria). In the settlement of Erdwerk I – one of the so-called *Herrenhöfe* (manors) – the proportion of game is extremely high with a total bone weight of almost 25 % (ibid., 224) – this is explained by the physiographic conditions on site (ibid., 226). The bear catches the eye, as it is represented with a minimum of eight individuals (ibid., 223, 224 tab. 1).[10] In this context, it is interesting that the nearby barrow cemetery furnished proof of a bear skin or a bear's paw as a grave good (see below).

As previously mentioned, the Early Latène period is still culturally closely related to the Hallstatt period, but there is a break in the following Middle Latène period. Not only were burial customs changing – it was also a phase of upheaval in other respects as well. The time of the Celtic migrations,

7 The faunal assemblage from the rectangular enclosures near Osterholz (Baden-Wuerttemberg) consists of 95 % domestic animals. Individual bear remains were found, but there is no information on the amount (Schatz/Stephan 2005, 5). The archaeozoological analyses of other settlements that were also carried out as part of the DFG priority programme 1171 "Early centralization and urbanization. Genesis and development of early Celtic princely sites and their territorial surroundings" draw a very similar picture. All sites have a strong dominance of domestic animals (Biel et al. 2006, 1–2 fig. 1), while wild animals – although documented in different quantities – play a clearly subordinate role (cf. Fig. 2).

8 This tooth, a right upper canine, comes from a young adult or, at most, middle-aged probably male bear. It has a perforation below the root tip, but this has been torn. A little below, there is another small hole, possibly indicating an attempt to repair the pendant (Schatz 2006, 13).

9 However, the researchers are sceptical about the high number of individuals (Kerth/Wachter 1993, 73–74). For comparison; for the Late Hallstatt period "princely seat" of Heuneburg (Baden-Wuerttemberg) with its extensive assemblage of animal bones, "only" (this is stressed by Kerth/Wachter 1993, 74) thirteen bear individuals – including evidence of an exceptionally large individual (Graf 1967, 17) – are documented (Braun-Schmidt 1983, 125, cited after Kerth/Wachter 1993, 74).

10 For comparison; only two single bear bones originate from the Early Latène period settlement of "Reps", 400 m west of the "princely grave" of Hochdorf (Baden-Wuerttemberg; Schatz 2009, 25 tab. 4, 45).

and the reverse flow of settlers who were in contact with the Mediterranean civilisations, brought a change in settlement patterns and economic systems. Large, open settlements and oppida emerged in which trade and craftsmanship flourished. Among the animal remains, wild fauna is occasionally represented, but, on the scale of things, hunting was of very low significance, as numerous archaeozoological analyses illustrate (Méniel 2002, 226–227, cited after Trebsche 2013, 216). One of the largest osteologically evaluated find complexes of this period stems from the Middle and Late Latène period oppidum of Manching near Ingolstadt in Upper Bavaria, as it is one of the most substantially explored oppida in central Europe. The archaeozoological record enables us to draw a differentiated picture of the role of animals in nutrition and cult in a proto-urban settlement. If one focuses on the bear, the relevant information can be quickly assessed as only three brown bear bones are reported from the occupation layer (Boessneck et al. 1971, 100).[11]

Excursus: The role of hunting in general and bear hunting in particular in the Hallstatt period – A case study from the *Osthallstattkreis*

As stated earlier, animal bones from settlement contexts are generally regarded as representative of the nutritional practice of a group of people. As we have seen, in the case of the bear it is usually a question of individual bones, which are difficult to interpret. In addition, however, one can also find clearly defined artefacts, such as pierced claws and teeth. Since bears are not domestic animals, hunting would be a plausible reason for the presence of bear remains in settlements. The hunting of fur-bearing animals is difficult to prove in archaeological contexts as they were probably skinned on the spot and the meat of carnivores does not seem to have been consumed on a large scale.[12] Thus the carcasses were often not brought into the settlements and hence their bones did not end up in the settlement waste (Von den Driesch 1993, 127; Trebsche 2018, 237). However, the scarcity, yet ubiquity, of bones from fur-bearing animals like the bear indicates that they were hunted (Trebsche 2013, 227; cf. Jacomet et al. 1999, 133 fig. 61). Peter Trebsche investigated the role of hunting – in general – in the Hallstatt and Early Latène periods, among others, on the basis of 74 archaeozoological studies from settlements of these periods (Trebsche 2013, 227–228). He was able to demonstrate that, in most settlements, hunting was 1) a regular activity, 2) seemed not to be the privilege of a certain social group, and 3) was not restricted to different settlement types or to certain game species, as hunting opportunities depended on available game resources in a site's catchment area (ibid., 225, 228; cf. Fig. 2). Due to their height, sheer mass and aggressiveness, bears are undoubtedly a huntsman's challenge. So, who was hunting bears?

If one is looking for depictions of hunting in general, the path leads to the *Osthallstattkreis*, which is at least partially close to the area of study.[13] Alexandrine Eibner has identified three groups of images based on representation conventions (Eibner 2004, 621–623). One is represented by the

11 Only two bones of *Ursus arctos* were found within the Late Latène period layer in a ditch at the enclosure (*Viereckschanze*) of Riedlingen (Baden-Wuerttemberg); these are said to be an indication of the use of the fur (Doll 2009, 323, 324 fig. 11, 329 tab. 3).

12 The fact that bears were most likely consumed is evidenced by bear bones from grave 250 of the Dürrnberg "Eislfeld", which are interpreted as the remains of meat goods, but which, however, cannot be clearly assigned to any buried individual (Wendling 2018, 286 tab. 2, 288). From the same period, there is evidence for the butchery of bears in the Early Latène settlement of Jenišův Újezd in Bohemia (Beech 1995). The consumption of bear meat is also assumed for Heuneburg (cf. Von den Driesch/Boessneck 1989, 150). The traces on the bones from Jenišův Újezd point to dismembering activities, but it is quite unclear if the animal was butchered for its meat (and associated bone working or other craft activities) or for ritual purposes (cf. Beech 1995, 167–168). Apart from that, the boundaries between the two can be fluid.

13 Occasionally, at least for the older Hallstatt period, the Bavarian eastern settler groups were already related to the *Osthallstattkreis* (e.g. Ettel 2006, 152 fig. 3, 154).

so-called *Situlenkunst* (situla art) that spread from northern Italy to the Alpine region, Carniola and Istria. This refers to toreutic works, where the figures were plastically driven out of the sheet metal from the underside. In part, the environment in which the hunt takes place – the forest – is present through the depiction of plants (ibid., 623). Bears do not appear at all in situla art (Egg/Kramer 2013, 454); in particular, stag hunting and, on a smaller scale, hare hunting are significant here (Eibner 2004, 623, 635 tab. 1). The second one leads us to the so-called Hallstatt period Kalenderberg group, situated in the east of Austria, Slovakia and western Hungary. From this context, nine images interpreted as hunting scenes are currently known (Trebsche 2018, 230 tab. 1). They were applied on ceramic vessels. Most of them are from graves, only one case comes from a hilltop settlement (ibid., 229). As far as the prey is concerned, in three images deer and once an aurochs could be clearly identified by their antlers or horns (ibid., 229). It is interesting to compare pictorial representations with the archaeozoological remains from settlement contexts, which provide additional information about the frequency, intensity and importance of hunting for meat supply, as well as about preferred hunting prey. According to the percentage of animal bones, the bear only plays a subordinate role in Hallstatt period settlements of the Kalenderberg group (ibid., 236) – the animal is found only in every fifth settlement (ibid., 237). The relationship between the *hunted* species (as shown in the form of animal bones from settlements) and the *depicted* species is remarkable – of the, at least eleven, animal species hunted in the Kalenderberg group, only red deer and aurochs can be identified in the images (ibid., 237), while hares, wild boars, foxes, badgers, wolves, beavers – or bears – are not depicted.[14] The images are therefore not a representative selection of individual hunting experiences, but a stereotypical pictorial formula that may be based on real hunting events, but offers a highly selective or completely imagined perspective (ibid., 238; cf. Koch 2003 concerning the *Situlenkunst*).[15]

The third group, however, finally leads us to the bear (cf. Eibner 2004, 635 tab. 1). On cistas (bucket-shaped vessels made of sheet bronze) that were found among the grave goods of the Kröllkogel and the Pommerkogel in Kleinklein in Styria, we finally find images of this animal or, more precisely, of bear hunting (Fig. 3). These vessels are made using hallmark techniques and show a group of warriors in military equipment – evidenced by shields and panaches – on a bear hunt (Egg/Kramer 2013, 454, 458–459; 2016, 91, 233; cf. the collage of the respective images from both graves in Egg/Kramer 2013, 459 fig. 201). According to Markus Egg and Diether Kramer, in the Mediterranean world militarily equipped hunters only appear when it comes to the battle of a mythical hero against the beastly monster, and the authors see such content also represented in Kleinklein. Perhaps this hunting scene portraying glorious founding heroes from mythical past times was of fundamental importance for the identity construction of societies in this region during the Hallstatt period (Egg/Kramer 2013, 459; cf. Bernhard/Guštin 2019, 43). Holger Wendling, on the other hand, points out that narratives from ancient Greece illustrate the responsibility of armed sections of the population to hunt dangerous and harmful animals like wild boar, bears and wolves (Wendling 2018, 298). Trophy hunting is closely related to such a "mandate of protection", which puts the hunter in danger and requires bravery and strength. Interestingly enough, evidence of trophy hunting, like claws or teeth, is often found in women's or children's graves. We shall return to that later.

14 Adrienne Frie summarises in her study on animal representation in Early Iron Age southeastern Slovenia that, amongst the number of depictions of wild animals, prey animals are more the focus of most of these depictions than the predators; bears for example are nearly absent (Frie 2017, 356).

15 Something very similar can be observed for the Bavarian region during the Hallstatt period; here, too, the various levels of selection and mechanisms of attribution are observable. Almost exclusively horses and birds are pictured – precisely those animal species that not only played a marginal role in the human diet, as reflected in the archaeozoological analyses of animal bones from settlement contexts, but which are also significantly not observable in graves in the form of meat goods (cf. Augstein 2017).

In any case, it is remarkable that on the one hand depictions of bear hunting were found in the area of Kröllkogel and Pommerkogel, both east of the hilltop settlement of Burgstallkogel, while in the nearby Höchschusterwald barrow group, west of the Burgstallkogel, one of the few Hallstatt period graves with bear remains came to light (see below).

Bears and the world of the dead

Animal remains are not isolated phenomena in the spatio-temporal context that is our focus here. In specialised literature, animal bones in graves are usually interpreted as evidence of meat goods. However, this is only one possible explanation for the existence of animal remains in this special social space, grave or burial ground. Analytically, a distinction can be made between an animal grave, an animal sacrifice, and meat goods. However, this classification is only partially applicable to archaeological findings – not least because the boundaries between the categories are possibly permeable (Augstein 2014, 86–87).[16]

Again, let us first take a look at the Urnfield period. In the context of the study and publication of the urnfields from the Regensburg area (Hennig 1993), where the first systematic and broadly based animal bone analyses from larger find complexes from that period in Bavaria were carried out (ibid., 36),[17] bears were not found among the animal remains. In my opinion, little has changed in the basic results of this study in general; other burial grounds of this period that have been published in the meantime confirm this picture.[18] However, now there are occasionally bear remains in some other Urnfield period graves (cf. Table 2),[19] which reveal that brown bears were hunted from time to time. Remains such as animal teeth, certain stones, or astragals, are usually interpreted as amulets (see below). In Regensburg-Burgweinting "Nordwest" in the Upper Palatinate, for example, grave goods with a presumed amulet function were found in some of the cremation graves, including a bear tooth (Zuber 2011, 289 fig. 24; cf. Buckel 2008, 135 pl. 1.10). It was found within the cremation remains of a 40-to-60-year-old person, presumably a man,[20] and was associated with other enigmatic objects, like a stone ball, a petrified shell with an unfinished drill-hole, and a flat

16 The material reflection of actions in the context of an animal burial does not necessarily differ from the material reflection in the context of an animal grave good or an animal sacrifice. Only the reconstruction of the context, the motivation of the animal deposit, combined with the knowledge of the circumstances of death of the animal can provide information about its character (Augstein 2014, 87).

17 The domestic animal species clearly dominate – sheep/goats, pigs, cattle, and dogs have been identified, while wild animals are only represented in four out of 44 graves by deer and stag (Hennig 1993, 36). Hennig (ibid.) points out that these remains consist mainly of the muscle-/meat-bearing bones of young animals, which are almost always the front and rear limbs. The graves with animal bones or meat goods often also stand out because of their burial equipment, with weapons, bronzes, bronze vessels, eye-catching ceramic vessels, or even gold (ibid., 38), found in graves of men, women and children (ibid., 39).

18 The *status quo* formulated by Hennig (1993) is confirmed, for example, by two recently excavated and extensively investigated burial grounds in the area of research. In Straubing-Sand (Lower Bavaria; see Frisch 2018), as well as in Zuchering (Upper Bavaria; see Schütz 2006), sheep/goats, pigs, and cattle dominate; canids, amphibians, and fish are documented in Straubing on a very small scale, but for both large and well-excavated burials grounds, the presence of bear remains has not been proven.

19 In fact, animal teeth found in graves of this period are often not specifically addressed in terms of the species (cf. the respective category for which often only the information "animal" or "predator" tooth is provided: Buckel 2008, 133–136).

20 For this and further information I am indebted to Joachim Zuber (Kelheim/Regensburg).

stone disk (Fig. 4).[21] For more findings, one has to switch to Austria. One of the objects from the cremation burial of an adult to mature man from grave 20 in the cemetery at Horn (Lower Austria), which dates to the Early Urnfield period, was a calcined, perforated claw from a brown bear (Lochner 1991, 151) and in the richly furnished cremation grave 68 of Innsbruck-Wilten (Tyrol) two centrally perforated fangs of a bear were found (Wagner 1943, 38, 132 pl. 34.15).

As far as the Hallstatt period is concerned, meat goods appear regularly in graves of the northern pre-alpine region (cf. Müller-Scheessel/Trebsche 2007; Stadler 2010).[22] Juliane Stadler has analysed the proportion of animal bones in eight cemeteries from that era from Baden-Wuerttemberg and Bavaria. In three cases, no bones of wild animals were found at all (Stadler 2010, 49 fig. 14, 221 tab. 1), so, on the scale of things, wild animals only played a subordinate role, at least as meat goods (ibid., 49).[23] Any evidence for wild animals is dominated by wild boar and red deer, followed by hare, birds, foxes, and fish (ibid., 50 fig. 15, 221 tab. 2), while bears are not even mentioned. Recently, Sebastian Beermann has dealt with bear claws and bear skins from Pre-Roman Iron Age grave contexts (Beermann 2016); previously, the focus concerning this topic was more on the 1st millennium AD (cf. Wamers 2009; Grimm 2013). The terminology used is not without its problems. "Bear skin graves" are those with unprocessed bear phalanges – even if there is only a single find (Beermann 2016, 15).[24] To reconstruct an entire coat from this is methodologically improper in my opinion. First, to prove a bear *skin*, remains of hair and skin/tissue are needed. And second, since (single) paws can have a different meaning than the entire fur, I would – at least analytically – plead for a terminological differentiation between "graves with bear skins" and "graves with bear paws".[25] I am aware that this will often not be possible due to the source-related limitations. Nevertheless, Beermann highlighted some interesting points: Processed and unprocessed bear claws do not appear together in one grave context; graves with processed and unprocessed bear claws are rarely found together, even in the same burial ground (Beermann 2016, 14). Furthermore, bear phalanges appear significantly more often in cremation than in inhumation graves – this will also be due to the better preservation conditions for calcinated compared to uncalcinated bones (ibid., 14), but basically, both burial rites are integrated into specific cultural, ritual or religious contexts that also include the specific handling of living beings as well as things.

Let us now look at the archaeological record. As mentioned at the beginning, the focus of this study lies on the Early Iron Age. Only a handful of examples from Hallstatt period graves with

21 Michal Přichystal also points to the association of pendants made from animal teeth or animal claws with other conspicuous objects, such as stones with natural or artificial openings, archaica, amber or coral beads, a bronze hand, or a bulla (Přichystal 2007, 350).

22 It should be noted that certain animal species appear in grave contexts that do not (necessarily) match the composition of the animal bones in the settlements, and there are also significant differences with regard to the slaughter age of the animals (Müller-Scheessel/Trebsche 2007, 76, 78 fig. 7; Stadler 2010, 78). Apparently there are different levels of meaning of animal species in different areas of past realities (Augstein 2017, 152).

23 It is a little confusing that Untereggersberg is one of the burial grounds which, according to some of Stadler's diagrams and tables, did not yield any wild animal bones (Stadler 2010, 49 fig. 14, 221 tab. 1), but appears at the same time in the list of graves with artefacts made from wild animal bones (ibid., 48 list 1).

24 The actual number of phalanges differs (Beermann 2016, 39 fig. 30). In terms of complete bear skins, twenty phalanges would be expected (ibid., 14, 39) – if there are fewer, diverse reasons can be imagined. On the one hand, the claws of an outstretched bear skin could have been overlooked due to their peripheral location, or, concerning cremations, could have been destroyed by the high temperatures of the pyre. On the other hand, and perhaps more interesting, there are culturally determined actions, such as an offering of a "cut-up", which means an intentionally incomplete fur – or just individual paws. Egon Wamers points out the special importance of bear paws in the context of the bear festival celebrated by the Sámi and Niwchen in northern Scandinavia and eastern Siberia, respectively; they were cooked and eaten separately, but were also used in fortune-telling and in oracles. Replicated as amulets on the shaman's robes, they could have an apotropaic effect or help the shaman on his journey to the Otherworld (Wamers 2015, 47).

25 Oliver Grimm as well only speaks of "bear-skin burials" or "bear-skin graves" if the presence of an actual bear skin is proven. Otherwise, in the case of bear claws, he speaks of "bear-related furnishings" or "bear-related findings" (Grimm 2013).

bear remains are to be mentioned here.[26] The list starts with two examples from Austria. Beermann (2016, 34; translation by the author) cites grave 99 from the eponymous site of Hallstatt in the Salzkammergut in Upper Austria as a "very early example of the appearance of the bear skin custom". In the context of the inhumation of a mature to senile man from the Late Hallstatt period, ten bear phalanges, among other things, were found that point to the presence of a bear skin, or (methodically more correct) several bear paws.[27] According to Beermann (ibid.; translation by the author), this is the "oldest direct proof for furnishing with a hide" and the oldest combination of armament and bear, which on the continent is actually more a phenomenon of the 1st century BC to the 2nd century AD (ibid., 36). This has to be put into perspective. On the one hand, with the above-mentioned mound 13 from the Höchschusterwald grave group of Kleinklein in Styria, we probably have an even older grave with a bear skin or bear paws, in which, at the same time, a combination of bear and armament is proven. In this grave, dating to the Early Hallstatt period (Ha C1b), calcinated unworked bear claws[28] were found within the cremation remains of a male individual (Bernhard/Guštin 2019, 36 note 10, 39). They have been interpreted as an indication that a bear skin was put on the pyre (ibid., 38; 39). The deceased is identified as an archer because of the high number of arrowheads (ibid., 39).[29]

In fact, in addition to the two Austrian sites,[30] there are other early examples to be mentioned (cf. Table 2). One of these is the cemetery of Werbach (Baden-Wuerttemberg).[31] While wild animals again do not appear as meat goods (Wehrberger 1984, 135), a broken bear phalange with two holes was found in grave 14 dating to Ha C/Ha D1 (Fig. 5a), the inhumation of a possibly female adult (ibid., 187). Discolouration by bronze oxide could be observed at the breaking point (ibid., 189). Apart from the bear phalange, the grave is remarkable in a number of ways. The rich burial equipment includes two eye-catching so-called *Hohlwulstringe* found in the pelvic area as well as an enigmatic hollow ball with a bronze grommet or socket,[32] and the arms of the deceased were strongly flexed towards the shoulders so that the hands came to rest in the collarbone area (cf. Augstein 2009, 13 fig. 1.3). Such a staging of the body can be found repeatedly in the burial grounds of the Altmühl valley, the Isar valley, and the Tauber valley (see Müller-Scheessel 2008; Nikulka 2008; Augstein 2009;

26 Leif Hansen sees the rarity of bear skins in graves as being due to preservation conditions (Hansen 2013, 253): however, the phalanges of a bear can be easily identified due to their characteristic morphology (Beermann 2016, 12, 14 fig. 3). There is an exceptional new find of actually a bear skin from the central burial of tumulus 17 in the Hohmichele barrow group near the Heuneburg hillfort. For further information and relevant literature I am indebted to Bettina Arnold (Milwaukee). The record has not yet been published conclusively (but cf. Arnold 2019, esp. 224; Rast-Eicher in print). Apart from that, there are several bear remains to be found on the Dürrnberg near Hallein, but this site also points to the rarity of brown bears in Early Iron Age burial contexts, because in the inventory of the *c.* 400 burial sites on the Dürrnberg, bear teeth and a bear's claw were only found in six graves (Pauli 1975, 130; Wendling 2018, 287–288, cf. 286 tab. 2). It is thus surprising that Andreas Bernhard and Mitja Guštin postulate that bear claws, especially as amulets, are well known from Iron Age graves (Bernhard/Guštin 2019, 38–39).

27 In Hallstatt, pierced bear teeth were also found in graves 139 and 535 (Kromer 1959, pl. 11.14, 78.16).

28 Sometimes there is talk of "several", sometimes of "numerous" claws (Bernhard/Guštin 2019, 36, 39) – unfortunately the finds are no longer available (ibid., 36–37 note 10), and there is also no illustration.

29 However, no archers hunting bears are pictured on the cistas from Kröllkogel and Pommerkogel.

30 A perforated lower canine of a brown bear from the Hallstatt burial ground of Statzendorf in Lower Austria (Rebay 2006, (I), 184) is also to be mentioned, which, however, cannot be matched to a certain grave, but is regarded as complementary to a perforated stone, a perforated boar tooth, and a miniature handle bowl (Inventory GD03; Rebay 2006, (II), 243; 469 PA56109b).

31 Due to the specific topography of the burial ground with a "honeycomb structure" the Taubertal group is culturally closely related to the Hallstatt period groups of the Altmühl and Naab valleys (Augstein 2015, 1, 19 with note 31).

32 Such an item was also found in grave 12 (Wehrberger 1984, 183, 205 fig. B3), the burial of an adult non-gendered person (ibid., 182). According to Wehrberger (ibid., 140–141), objects like these belong to a hip dress or hip jewellery. In the case of Werbach, where they were found in the head area, he assumes that they must have been displaced in the course of grave disturbances. This is understandable in the case of the heavily disturbed grave 12, but I am sceptical about the less disturbed grave 14 and have considered a kind of "ceremonial device" or "sceptre" instead of an item of dress in another publication (Augstein 2009, 19–20).

2011; 2013a; b), always in women's or – less often – children's graves. The first ones are often the most well-equipped women of the respective burial grounds, but something other than "wealth" seems to have determined the status of these women (cf. Augstein 2013b, 370). Grave 21 from Kelheim-"Am Urnenfeld" (Lower Bavaria), however, is a child burial. The infant, who died at the age of about six months, was given a small bronze bracelet, small bronze spiral roulettes indicating a chain, and a pierced brown bear's tooth (Meiborg/Müller 1997, 162 pl. 130C).[33]

But there are some more examples. The already-mentioned grave 4/1990 at Niedererlbach, which should be dated as generally Late Hallstatt (Ha D), is said to have been robbed and unfortunately heavily disturbed (Koch 1992, 56). It is a collective burial[34] of one man and two women; the objects still in the grave and the remains of meat goods (parts of a young pig and a young cow) cannot be assigned to any of the individuals.[35] The same is true for the four phalanges of a brown bear as "indications of an added fetish or bear fur" (ibid., 56; translation by the author). In grave 30 of Riedenburg-Untereggersberg (Lower Bavaria; Fig. 5b), which also dates to the Late Hallstatt period (Ha D1; Nikulka 1998, 117; 137), two bear claws were found in the northern part of the chamber of "burial horizon II", which were only identified during the analysis of the animal bones; therefore, their exact position cannot be determined (ibid., 235–236). They belong to the disturbed primary burial, the inhumation of a (probably young adult) man (ibid., 235), whose other grave goods include two iron spear heads (ibid., 237, 236 fig. 78).[36]

The low importance of hunting during the following Latène period, as already mentioned above, is also reflected in the funeral system. Beermann's so-called "bear skin graves" of the Late Pre-Roman and Early Roman Iron Age seem to be "an almost exclusively Germanic phenomenon" (Beermann 2016, 19; translation by the author). In the area of research, the bear is virtually invisible.[37] The only exceptions in the quasi "Celtic" milieu are a few "elite graves" in England, Luxembourg, and France, "which can be assigned to a Gallo-Roman context" (ibid., 19; cf. 34–36; translation by the author), and here the offering of bear skins "may have been adopted as a foreign custom" (ibid., 36; translation by the author).[38]

So, what remains to be noted? First of all, in comparison to those of the Pre-Roman Iron Age in the Germanic area, the Hallstatt graves observed here are all inhumation graves except for the ones in Kleinklein and Landersdorf.[39] Furthermore, in the graves presented here there are four cases of

33 In this burial ground the offering of pendants is in fact limited to infant graves. In the five examples, in addition to the bear's tooth, a clay bead, a wheel-shaped object, and an amber bead were found. Due to the materials used, they are interpreted as amulets (Meiborg/Müller 1997, 96).

34 Hubert Koch speaks of a "multiple burial" (Koch 1992, 56). The term, however, implies the simultaneous deposition of the deceased. Since the time lag between the burials cannot be determined and subsequent burials were a regular practice during the Hallstatt period, I prefer to refer to them as "collective burials" (cf. Eggert 2012, 59, 62).

35 Bear bones from Hallstatt period graves are rare – all the more reason to have a close look at the contexts and connecting factors. Although grave 4/1990 from Niedererlbach is severely disturbed and the bear claws cannot be assigned to a distinct burial, two women found their last rest here. All women buried in this necropolis – and thus probably also the two from grave 4/1990 – show the same angulation of the arms (Koch 1992, 60 note 13) as the deceased from grave 14 at Werbach.

36 Unfortunately, there is no image of the bear claws, so that it is not certain whether these are worked or unworked objects. The latter would be the criterion for adding grave 30 to the group of early – in the sense of Hallstatt period – graves with bear skin or bear paws, and it would also provide another example of the combination of bear and armament.

37 From the Early Latène period, there is a grave excavated early at Ingelfingen-Criesbach (Baden-Wuerttemberg) from which, besides some rings and an iron needle with an amber head, a neck ring with ten glass beads and a bear tooth pendant was brought to light. There is no anthropological analysis, there are just said to be about "apparently three inhumation graves" (Klein 2004, 341 no. 475).

38 In fact, Beermann's mapping of the "bear skin graves" shows only one single site in the area of study (Beermann 2016, 18 map 1) – this is the Merovingian cemetery of Großprüfening, city of Regensburg, where a single bear phalange was found in a cremation grave (Eichinger/Losert 2004, 98).

39 In cremation grave 1 at Landersdorf, a calcinated and perforated bear claw was found within the cremation remains of an adult, presumably a woman, and a child (Hoppe 1986, 166).

unworked bear claws, which point to a bear's fur or paw (Table 2). If it really was a bear skin, the question of the meaning of its presence in the grave arises. Pragmatically speaking, a fur is first and foremost a soft underlay. But the potential emotional charge behind the offering must also be considered. In the belligerent-martial societies of the central European Iron Age, victory over dangerous and powerful animals such as wolf, bear, boar, aurochs, or bison and the ostentatious display of the fur promised prestige (Wendling 2018, 299). This may have been true in life as well as in death. Looking at the specific figures (Beermann 2016, 39 fig. 30), there are only very few graves where the number of phalanges makes the offering of a complete bear skin possible.[40] Among the four graves with unworked bear claws, only grave 99 from Hallstatt with ten phalanges indicates the mandatory presence of more than one bear paw.

In five cases, on the other hand, we are dealing with artificially worked objects (Table 2; Fig. 6). The meaning will differ from that of the unworked bear remains. Interestingly, animal teeth or claws as pendants in graves are always only present as individual pieces (Schönfelder 1994, 217). According to the general consensus, they have been interpreted as amulets.[41] Objects with a potential amulet function resemble each other throughout the ages and across geographical and cultural areas, in most cases up to the present – often, they are in fact animal teeth or animal claws. The offering of an amulet reflects less complex ideas of gods and myths and more of a kind of "folk belief", which was based on the power of individual objects as a means of protection and magic for individual persons (Buckel 2008, 112).[42] Ludwig Pauli noted in his study of Iron Age amulets that bear canines were the second most common animal teeth after boar tusks, found primarily with women and children (Pauli 1975, 129–130), who were considered to be typically in need of protection.[43] While Leif Hansen also claims that these items had an apotropaic function and were not predominantly hunting trophies (Hansen 2013, 252), Adrienne Frie stresses the fact that the "most dangerous parts of the bear were harvested and retained", which indicates "that these were quite literally hunting trophies" (Frie 2017, 335). Another facet is that amulets made from animal bone or teeth were supposed to have "transfer qualities of the animal to the human, be it vital force, strength, or power" (Schmölcke et al. 2017, 906).[44] If one takes this further, one comes across evidence for transformations of bears into humans and vice versa (Brunner 2010, 20–33).

40 Beermann notes grave 1909/11 from Großromstedt (Thuringia) with 17 phalanges (Beermann 2016, 40, 87), but Gustav Eichhorn only mentions five specimens (Eichhorn 1927, 233, 234, 273).

41 For a definition and the history of research see Buckel 2008, 72–73. Amulets are often pendants that were worn around the neck (ibid., 72). An "amulet function" will, however, often be hardly distinguishable from a "jewellery function" (Warneke 1999, 195; cf. Buckel 2008, 121; Schmölcke et al. 2017, 907). Further, pendants can basically have manifold and overlapping functions. "Only the wearer's belief in magical powers or the demonstration of jewellery as an expression of wealth or the like gives the object its meaning" (Warneke 1999, 195; translation by the author).

42 In the funeral context, this can be both protection *for* the deceased and protection *against* the deceased. Pauli (1975, 140–144) lists examples of amulets in the context of "irregular" or "deviant burials", which are interpreted as a means of defence against dangerous or restless dead.

43 Cf. Přichystal 2007, 350. From the Roman provinces in Britain and Germany, some small bear figurines are known that also mainly come from infant and younger child burials (Schmölcke et al. 2017, 904, 905 fig. 4). They can be "connected with the complex of motherhood, protection and escort. The animals might have functioned as guides as well as companions and protectors, ensuring that the small child does not travel to the afterworld alone and unguarded" (ibid., 904). Bear tooth pendants have also been found in the Merovingian period graves of children and women (ibid., 907).

44 Alice Choyke stresses that using specific skeletal remains of particular animals attributes particular powers to them or, in other words, specific apotropaic beliefs are associated with specific body parts (Choyke 2010, 200). On the one hand, skeletal elements can represent the whole animal (ibid., 202), on the other hand it is noticeable that just certain elements of the head (especially the teeth) and the feet – those body parts associated with defence and movement – were used for making amulets (ibid., 208). She (ibid., 201) calls them "bones of power". The same body parts seem to have been relevant in other periods. Schmölcke et al. (2017, 903) quote examples both from the Palaeolithic and modern Nordic societies.

The end of the Bronze Age is an epoch of explicit cultic expression – just think of the numerous deposits or hoards, including those of "cult equipment" such as the gold cones/gold hats, or symbolically charged objects in graves, such as metal vessels with a depiction of the *Vogel-Sonnen-Barke* ("bird-sun-boat"), or cult wagons. While the mythological-cosmological pictorial language – apart from isolated reminiscences, e.g. in the Hochdorf "princely grave" – was largely abandoned at the end of the Urnfield period, so-called burnt offering sites have been documented in the Bavarian Alpine foothills to show a continuity of cult practices from the Urnfield to the Hallstatt period. Some of these are massive, hill-like accumulations of shattered pottery, heavily burnt animal bones and ashes in often exposed topographical locations. Here, too, domestic animal species of cattle and sheep/goat dominate; pigs are not important, wild animals are negligible in quantitative terms (Lang 2005, 32; Stadler 2010, 78; cf. Augstein 2017, 153), and bears play no role at all (cf. Weiss 1997).

Finally, concerning cult practices in the following Latène period, we will first take a look at ancient Teurnia, near Spittal an der Drau (Carinthia). Andreas Lippert interprets the ash layer from the Middle and Late Latène period settlement phases and the objects found therein – especially weapons – also as relics of a burnt offering site (Lippert 1992). The animal teeth found there – two mandibular canines of a brown bear in addition to two of young domestic pigs – are thus interpreted as the remains of burnt offerings.[45] The Latène period indeed revealed further differentiated evidence for complex cult events – e.g. the sanctuaries in northern France, such as Gournay-sur-Aronde or Ribemont-sur-Ancre, the complexes of Roseldorf in Austria, or Mormont in Switzerland. In Gournay, it was domestic animals that played a central role in cult events over the entire use phase (Scherr 2013a, 227), while in Ribemont no large animal sacrifices took place during its most prominent use phase (first half of the 3rd century BC) as a *tropaion* with decapitated, armed warriors (Scherr 2013b, 235).[46] Domestic animals also dominate the find spectrum of the large central place of Roseldorf, for which differentiated offerings in districts known as "sanctuaries" are evident, mainly in the Middle Latène period (Holzer 2009, 77). Wild animals are poorly or not at all represented and obviously were of no importance in cult practice. Finally, in 2006, an important ritual place from the 2nd and 1st centuries BC was discovered on Mormont Hill in the Swiss canton of Vaud. Here, over two hundred and fifty structures, pits and shafts, up to 5 m deep, were found, in which vessels, tools, jewellery, coins, grindstones, and the remains of people and animals had been deposited (Dietrich et al. 2009, 3). Only 0.1 % of the animal remains were from game (Méniel 2009, 10). The skull of an adult bear was found in one of the pits (ibid., 8 with fig.) – his right canine, on the other hand, was found in a pit about 30 m away (ibid. 8). Together with the skull of a wolf, they represent the only predators documented there and have been interpreted as prestigious hunting trophies (ibid., 10).

However, there are no comparable structures in the area in question. It should therefore be noted that the bear appears only to a limited extent in cult practices. Thus, explanations for the "invisibility" of an animal that is at least physiognomically extremely visible are finally yet to be found.

45 This would thus be unusual in two respects – on the one hand, wild animals are not usually found in the context of burnt offering sites while, on the other hand, Lippert himself points out that burnt offering sites are unfamiliar in the Celtic region (Lippert 1992, 297; sceptical about this functional approach: Glaser 1993, esp. 295).

46 From the middle of the 2nd century BC, however, animal sacrifices have finally been documented in large numbers – again, mainly domestic animals were concerned (Scherr 2013b, 237).

Conclusion: Why did the bear not matter?

While the bear played a prominent role in the 1st millennium AD, especially in the Scandinavian area and in northern central Europe (cf. Schönfelder 1994; Wamers 2009; Grimm 2013), it played only a minor one in the Pre-Roman metal ages of southern and southwestern Germany. Although wild animals were obviously hunted then, the bear makes only a brief appearance. Rather, the periods seem to represent "domestic animal periods". Even if there are signs of social differentiation in settlement patterns and burial practices, the Urnfield, Hallstatt and Early Latène periods were primarily characterised by a rural way of life and economy. This is even true for the later part of the Latène period, in which social and structural changes occurred that were accompanied by differentiation in settlement, trade and craftsmanship – but here, too, the dominance of domestic animal species in the archaeological evidence remains.

The reason that the bear played such a small role in the hunting of animals could perhaps be that it had already retired into the large forests – human intervention in its environment certainly reached regionally noticeable scales in the 1st millennium BC, and there is little doubt that natural conditions have a strong influence on the presence or absence of wildlife. At the same time, however, it is precisely this rarity and dangerousness that can lead to an accumulation of significance. After all, the quasi-absence of the bear does not necessarily mean that this animal has not played a role. It is also conceivable that a taboo was created, as has been proven for bears from numerous ethnographic and historical contexts (Schmölcke et al. 2017, 901–902; cf. Brunner 2010, 9). The interpretation of bear remains in the literature ranges between hunting trophy, apotropaion, and status indicator. Let us take a last look at the Hallstatt period burials with bear relics – how are the definite finds of bear remains to be interpreted?

First of all, the infant grave at Kelheim, the only case of a subadult individual with bear remains, stands out. According to the "classical" interpretation, the bear tooth would have had a protective, apotropaic function. For the other graves, however, it is more difficult to find coherence in terms of age, gender, and potential social role. Based on sources from the Middle Ages, the hunt for big game is assumed *a priori* to have been a gender-specific domain of men, but, especially for 1st-millennium Scandinavia, one has to ask how the frequency of bear teeth and bear claws in women's graves can be explained. Against this background, the portrayal of a successful bear hunter and his trophy that ends up as a grave good gets a little shaky. On the one hand, Siegmund Oehrl refers to "hunting women" as they are documented in various sources – strong, courageous women who stand up to the dangerous predator (Oehrl 2013, 312–313). At the same time, he tries to depolarise this with an alternative narrative that lets the husband act as a successful bear hunter, who gives his deceased lover his most valuable hunting trophy to take with her on her final journey. In the afterlife "everyone […] should see that the deceased was nothing less than a hero's wife".[47]

It is important to avoid androcentric views which, *a priori* and undifferentiated, assign passive roles to women (for the female "princely grave" phenomenon in the Early Iron Age cf. Arnold 1995), not only because predator remains are thoroughly associated with status-bearing women from various contexts.[48] But, while in some proto- and early historic circumstances there is a recurring

47 Martin Schönfelder, who clearly understands bear claws in graves as a "male attribute", argues similarly (Schönfelder 1994, 220). He explains the few exceptions thus: "the grave goods of the woman include the prestige goods of the husband who arranged the funeral".

48 Torun Zachrisson and Maja Krzewińska introduce an example from the Migration and Merovingian periods in present-day Sweden – the "Lynx Ladies", women who are richly furnished with grave goods (among others lynx skins) and who, in addition to their function as head of the household, have assumed an important role in cult and ritual practices (Zachrisson/Krzewińska 2019).

connection between bear remains and women's and children's graves, these do not dominate in the spatio-temporal context that is at issue here. Among the few burials with bear remains from the area in question, the presence of women has been proven in only exceptional cases – in one case (Werbach) almost certainly, in another (Niedererlbach) only possibly. In one case, we have a pierced bear phalange, in the other we have four apparently unworked phalanges, possibly a bear paw. The Werbach find, if one considers its entire context, could be seen as the representation of a person experienced in the subject of roles in cult and ritual. Here, the bear phalange was found together with features such as the functionally ambiguous bronze hollow ball with grommet and the symbolic staging of the corpse. The buried person belongs to a group of women with a special status that was not just based on "wealth". It should be asked whether the bear remains are to be understood as status indicators.[49] In Kleinklein, for example, we have an archer who is included in the "circle of better equipped warriors in Kleinklein society", with a "position between the princes and the simple warriors" (Bernhard/Guštin 2019, 39, 41; translations by the author). Nikulka (1998, 174) in turn refers to grave 30 from Untereggersberg with its bear remains, located in a separated group of graves, to which, in addition to the two potential "primary or founder graves" (the burials of particularly old men with particularly large grave monuments and rich grave furnishings), further graves of inhumated men of advanced age belong, "most of whom have also been provided with special grave goods" (translations by the author).

While in the Urnfield and Hallstatt periods – and this is apparently not due to the state of research – only a small group of people was attributed with bear remains,[50] the bear appears significantly more frequently in burials at the end of the Latène period or at the transition from the Latène period to the Early Roman Iron Age. Initially, this applies mainly to the central and northern German regions; however, from the 2nd century AD onwards, the number of finds increased in Scandinavia (Wamers 2009, 9 fig. 5). The remains involve bear claws as well as bear skins (Wamers 2009; Grimm 2013). Since around four hundred of the graves with bear remains are known from northern Europe and at least a hundred from central Europe (Grimm 2013, 290, 291), there is talk of a "mass phenomenon" (ibid., 291; Schmölcke et al. 2017, 905) – a phenomenon that even had an impact on the local bear populations (Schmölcke et al. 2017, 905; cf. Lindholm/Ljungkvist 2016).

In many cultures, both past and present, bears are what Ulrich Schmölcke, Daniel Groß and Elena Nikulina call "dominant symbols" (Schmölcke et al. 2017, 902), which is rooted in their ambivalence and in their representation of many different actions and meanings. Animals always held a special significance in mythology, religious beliefs and practices. They were far more than passive foils of human action; they had agency. Animals and their representations can therefore be understood as part of a complex system of symbolic communication. When it comes to bears, the archaeological record indicates that they were rarely hunted and they were also rarely part of the iconographic repertoire. But it is perhaps that scarcity that creates their importance. Bears are actually highlighted in the archaeological record and thus allow insights into the world of ideas and the construction of the reality of past people.[51]

49 I understand "status" as the determination of the social position of an individual in relation to other individuals in the community, and this relationship does not necessarily have to be hierarchical (cf. Augstein 2015, 193 with note 52).

50 Concerning the Hallstatt period, Hansen (2013, 253) has pointed out that the teeth and claws of predators such as the bear are documented "in rich burials as well as in 'normal' graves". A clear "elite context" does not seem to be tangible here.

51 Postscriptum: Only after typesetting and layout I came across another bear claw – as there is talk of an "amulet", it is probably perforated. It originates from the richly furnished burial of an adult male in the central chamber of the large Hallstatt period tumulus at Repperndorf, district of Kitzingen (Lower Franconia, Bavaria). That burial, however, had already been robbed in antique times (Wamser 1982).

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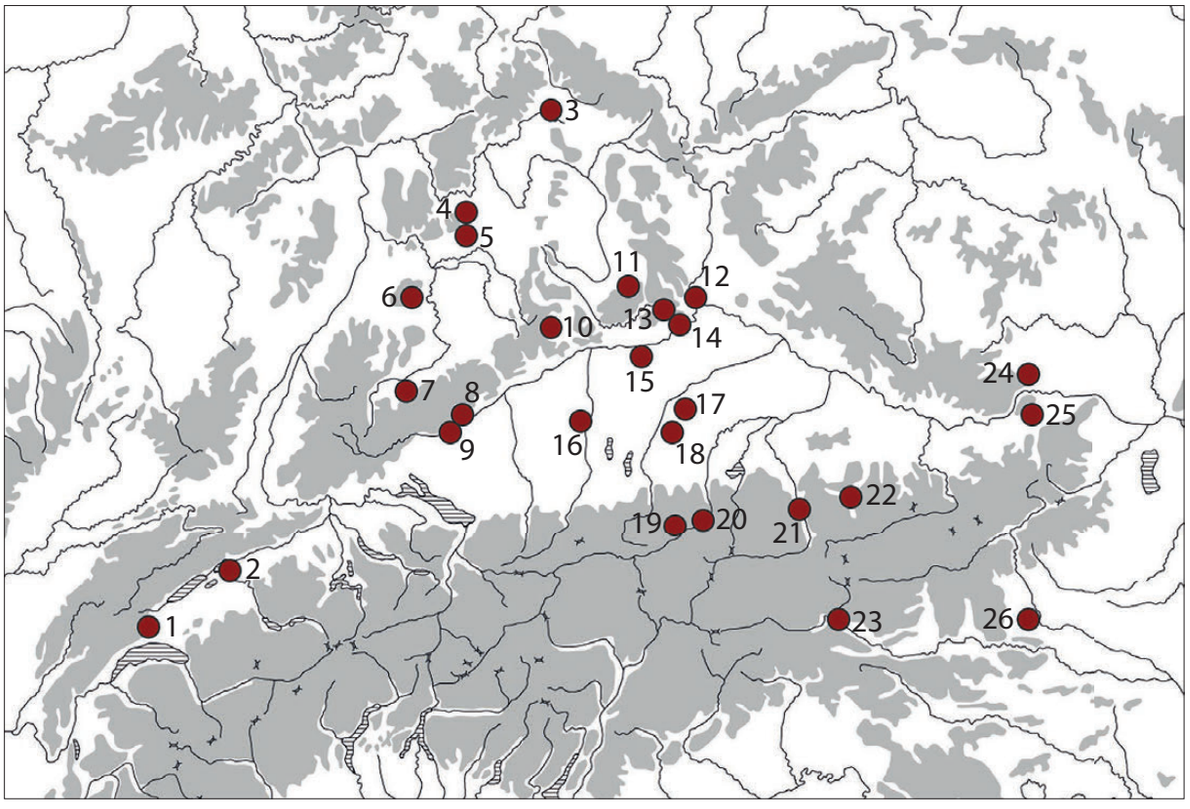


Fig. 1. Sites with bear remains mentioned in the text. 1: Mormont Hill (canton of Vaud, Switzerland); 2: Mörigen at Lake Biel (canton of Bern, Switzerland); 3: Eiersberg, Rhön-Grabfeld district (Bavaria, Germany); 4: Werbach, Main-Tauber district (Baden-Wuerttemberg, Germany); 5: Ingelfingen-Criesbach, Hohenlohe district (Baden-Wuerttemberg, Germany); 6: Hochdorf, district of Ludwigsburg (Baden-Wuerttemberg, Germany); 7: Achalm near Reutlingen, district of Reutlingen (Baden-Wuerttemberg, Germany); 8: Riedlingen, district of Tübingen (Baden-Wuerttemberg, Germany); 9: Hohmichele barrow group near the Heuneburg near Hundersingen, district of Sigmaringen (Baden-Wuerttemberg, Germany); 10: Osterholz, district of Kirchheim am Ries (Baden-Wuerttemberg, Germany); 11: Göllersreuther Platte near Landersdorf, district of Roth (Bavaria, Germany); 12: Burgweinting, city of Regensburg (Bavaria, Germany); 13: Riedenburg-Untereggersberg, district of Kelheim (Bavaria, Germany); 14: Kelheim, district of Kelheim (Bavaria, Germany); 15: Manching, district of Pfaffenhofen an der Ilm (Bavaria, Germany); 16: Graben near Augsburg, district of Augsburg (Bavaria, Germany); 17: Niedererlbach, district of Landshut (Bavaria, Germany); 18: Erding, district of Erding (Bavaria, Germany); 19: Kiabichl near Faggen, district of Landeck (Tyrol, Austria); 20: Wilten, city of Innsbruck (Tyrol, Austria); 21: Dürrnberg near Hallein, district of Hallein (Salzburg, Austria); 22: Hallstatt, district of Gmunden (Upper Austria, Austria); 23: Teurnia near Spittal an der Drau, district of Spittal an der Drau (Carinthia, Austria); 24: Horn, district of Horn (Lower Austria, Austria); 25: Statzendorf, district of Sankt Pölten-Land (Lower Austria, Austria); 26: Kleinklein, district of Leibnitz (Styria, Austria) (map M. Augstein, on the basis of "Tübinger Stumme Karte").

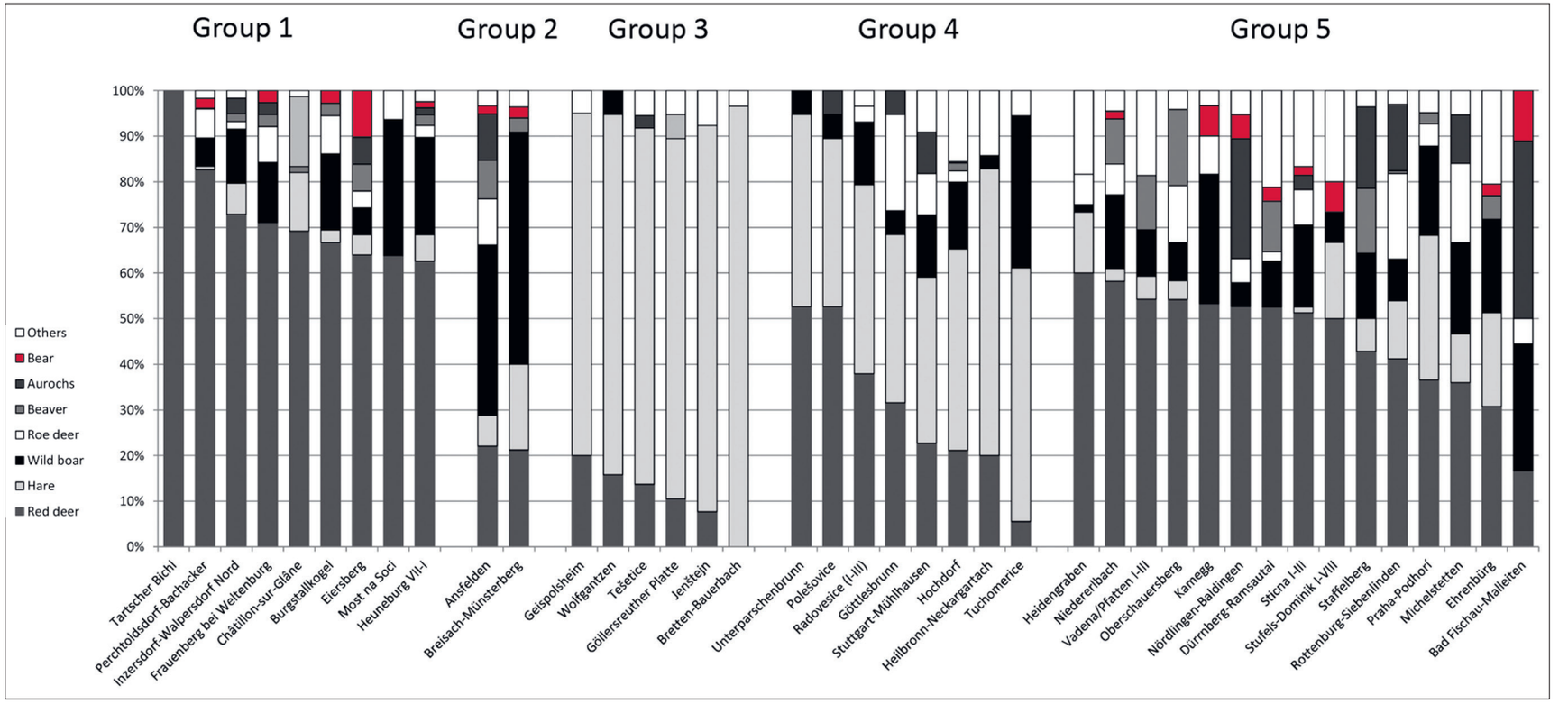


Fig. 2. Hunted game species. The bear is highlighted in red (modified after Trebsche *2013, 226 fig. 10).*

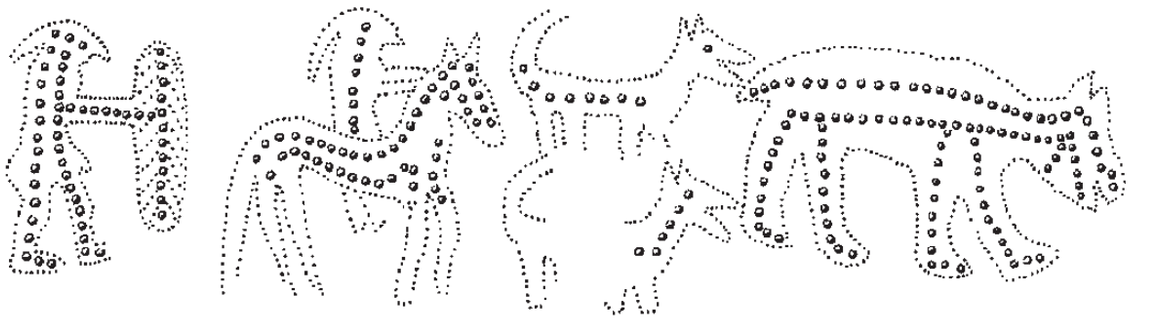


Fig. 3. Detail of the bear hunting scene on a cista from Kröllkogel, Kleinklein (Styria; after Hansen *2013, 249 fig. 13; for a larger section see* Egg/Kramer *2005, 30–31 fig. 24).*



Fig. 4. Enigmatic objects from an Urnfield period cremation grave from Burgweinting, city of Regensburg (photos P. Ferstl, city of Regensburg).

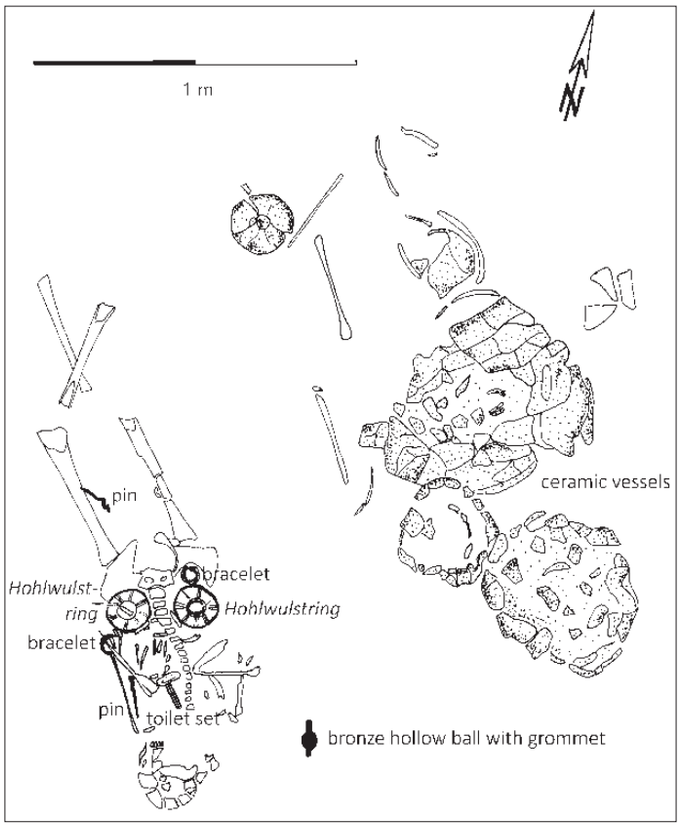


Fig. 5a. Hallstatt period inhumation grave (disturbed to varying extent) with bear remains: Werbach, grave 14 (after Wehrberger *1984, 186 fig. 40). The accurate position of the bear remains is not marked on the plan.*

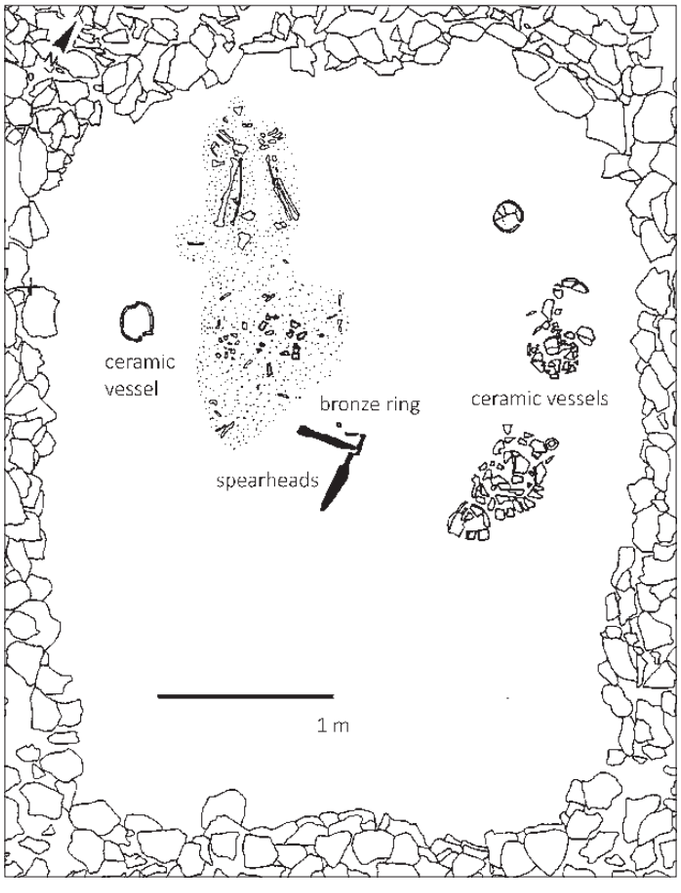


Fig. 5b. Hallstatt period inhumation grave (disturbed to varying extent) with bear remains: Riedenburg, Untereggersberg, grave 30 (after Nikulka *1998, 236 fig. 78). The accurate position of the bear remains is not marked on the plan.*

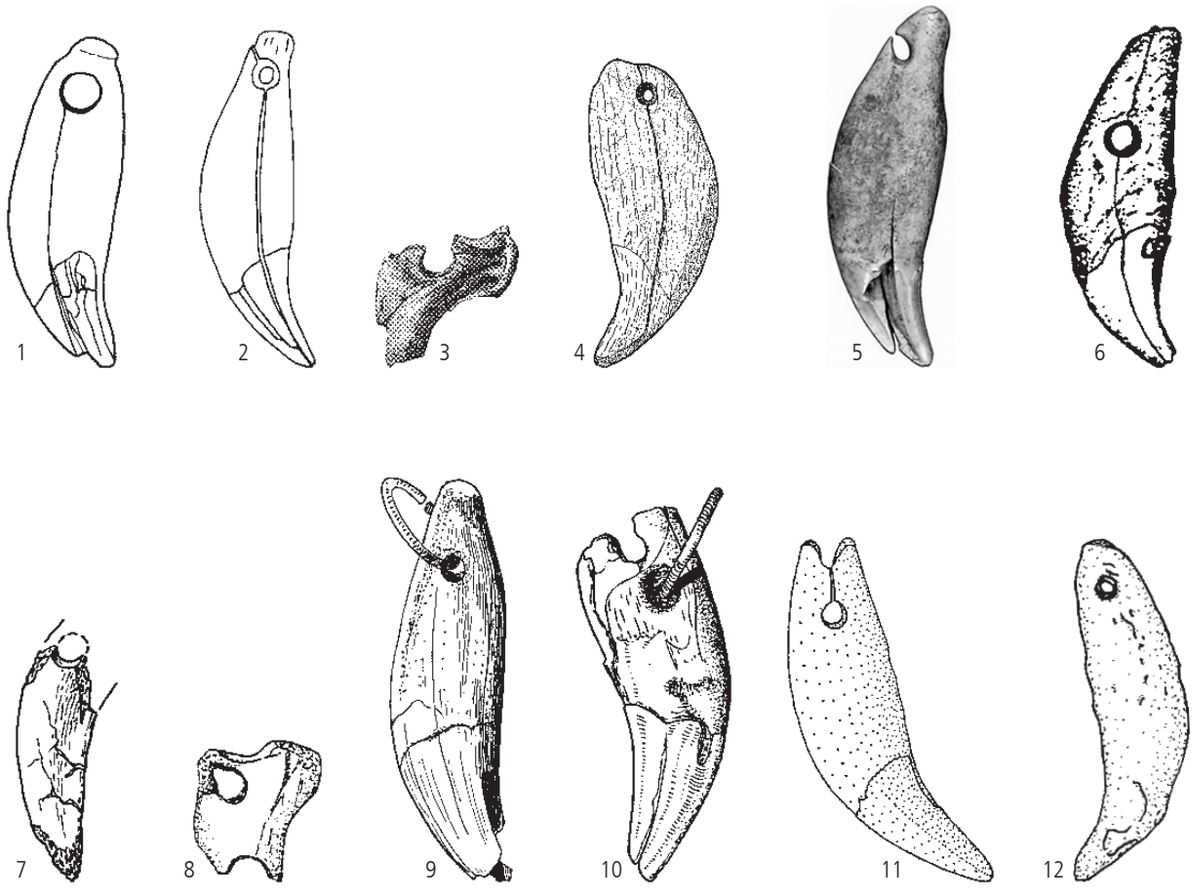


Fig. 6. Selection of worked bear remains from settlements and graves from the Urnfield and Hallstatt periods (objects not to scale). 1: Mörigen (after Bernatzky-Goetze *1987, pl. 116.9); 2: Mörigen (after* Bernatzky-Goetze *1987, pl. 116.10); 3: Horn, grave 20 (after* Lochner *1991, 197 pl. 25.7); 4: Burgweinting (after* Zuber *2011, 289 fig. 24); 5: Göllersreuther Platte (after* Schatz *2006, 13 fig. 5a); 6: Kelheim-"Am Urnenfeld", grave 21 (after* Meiborg/Müller *1997, pl. 130 C); 7: Thalmässing-Landersdorf, "Brandgrab 1" (after* Hoppe *1986, pl. 110.11); 8: Werbach, grave 14 (after* Wehrberger *1984, 211 fig. 62.16); 9: Hallstatt, grave 139 (after* Kromer *1959, pl. 11.14); 10: Hallstatt grave 535 (after* Kromer *1959, pl. 78.16); 11: Dürrnberg, grave 32/2 (after* Pauli *1975, fig. 6.6); 12: Statzendorf, inventory GD03 (after* Rebay *2006, (II) 469 fig. PA56109b).*

Table 1. The archaeological periods relevant to this study.

Archaeological period	**Relative chronological phases**	**Absolute chronology**
Urnfield period	Ha A	*c.* 1200–*c.* 1050/1020 BC
	Ha B	*c.* 1050/1020–*c.* 800 BC
Hallstatt period	Ha C	*c.* 800–*c.* 620 BC
	Ha D	*c.* 620–*c.* 450 BC
Latène period	LT A – LT B	*c.* 450–*c.* 260/250 BC
	LT C	*c.* 260/250–*c.* 150/120 BC
	LT D	*c.* 150/120 BC–*c.* turn of eras

Table 2. Bear remains, associated grave goods, and – if available – anthropological classification of the deceased for selected graves of the Urnfield and Hallstatt periods.

Site / Grave	Bear remains	Dating	Anthropological analyses	Associated objects / Grave goods	References
Regensburg-Burgweinting "Nordwest"	Perforated bear tooth, length 8.3 cm	BZ D	Cremation Male by tendency, 40–60 years	Stone ball (diameter 5.4 cm), petrified shell with an unfinished drill-hole (6.1 x 5.2 cm), flat stone disk (diameter 5.2 cm); besides the urn fragments from two ceramic vessels	Buckel 2008; Zuber 2011
Horn Grave 20	Calcinated claw of a brown bear (phalanx-3-fragment), perforated at the base	Ha A1	Cremation Male, adult–mature Possibly second individual	Fragments of six ceramic vessels	Lochner 1991
Innsbruck-Wilten Grave 68	Two perforated fangs of a brown bear	Ha A1	Cremation –	Knife, belt buckle, fragments of a bracelet with square profile, two pendants (bird-shaped and wheel-shaped), fragments of a decorative disk with concentric circles, four pins with *Vasenkopf*, ceramic vessel	Wagner 1943
Kleinklein Höchschusterwald group Mound 13	"Several" / "numerous" calcinated, unworked bear claws	Ha C1b	Cremation Male	Bronze *Mehrkopfnadeln*, bronze *Hohlverteiler*, bronze bead, amber bead, bronze double hook, fittings, bone arrow heads, iron winged axe, iron socketed axe, knife, lugs, rings, chisel, ceramic vessel (urn)	Bernhard/Guštin 2019
Kelheim-"Am Urnenfeld" Grave 21	Perforated brown bear tooth	Ha C	Inhumation Infans I (*c.* 6 months)	Small bronze bracelet, small bronze spiral roulettes	Meiborg/Müller 1997
Werbach Grave 14	Bear phalange, double-drilled, found near the skull, without further details of the position	Ha C/Ha D1	Inhumation Female?, adult	Bronze pins, bronze bracelets, bronze *Hohlwulstring*e, bronze hollow ball with grommet, toilet set, bronze spiral rings, ceramic vessels	Wehrberger 1984
Untereggersberg Grave 30	Two bear claws	Ha D1	Inhumation Certainly male, adult, probably early adult	Two iron spearheads, small bronze ring, fragments of an iron wire, ceramic vessels	Nikulka 1998
Thalmässing-Landersdorf "Brandgrab 1"	Calcinated bear claw, perforated, fragmented	Ha D1	Cremation Multiple burial Female by tendency, adult, and child	Bronze *Melonenarmband*, bronze twisted neck ring, ceramic rattle ball, three ceramic vessels	Hoppe 1986

Cont. Tab. 2. ▶

Cont. Tab. 2

Site / Grave	Bear remains	Dating	Anthropological analyses	Associated objects / Grave goods	References
Niedererlbach Grave 4/1990	Four phalanges of a brown bear	Ha D	Inhumation Disturbed collective burial Male, mature and female, early mature and female, early adult	Diverse bronze rings (head-/hair dress, or items of horse's harness), fragments of an iron snaffle, iron pin, fragments of amber beads, ceramic fragments, fragments of a bronze sheet and roulette; probably tooth of a sheep/goat and atlas of a dog/wolf	Koch 1992
Hallstatt Grave 99 (new excavations)	Ten phalanges, unburnt	Ha D	Inhumation Male, mature–senile	Iron weapons (axe, sword or knife, dagger), amber jewellery (ribbed amber beads)	Beermann 2016; https://www.diepresse.com/585994/ (last accessed: January 13, 2021)
Hallstatt Grave 139 (old excavations)	Perforated brown bear's tooth, provided with a bronze ring, right lower canine of *Ursus arctos*, length 7.1 cm	Hallstatt period (generally)	Inhumation – (archaeologically: male, "warrior")	Two open bronze wire rings, bronze *Kugelkopfnadel*, fragment of an iron spearhead	Kromer 1959
Hallstatt Grave 535 (old excavations)	Bear canine with two drillings at the root. One hole is broken out, in the other one there is a ring of bronze wire pulled in, length 6.5 cm	Hallstatt period (generally)	Inhumation – (children's grave because of the size of the human remains)	Three bronze wire rings	Kromer 1959
Statzendorf Inventory GD03	Perforated lower canine of a brown bear	Hallstatt period (generally)	–	Perforated stone, perforated boar tooth and miniature bowl with handle	Rebay 2006

Tracking former royal dignity: The bear in medieval German literature

By Sabine Obermaier

Keywords: Medieval German literature, Vita Galli, Reynke de Vos, Nibelungenlied, Schrätel und Wasserbär

*Abstract: In medieval German literature, the bear – compared to the horse, the dragon, the lion or the fox – leads a rather marginal existence. At first glance, Michel Pastoureau's thesis of the bear as the "fallen king" seems fully confirmed: The bear has not only been eliminated from the medieval forest, but also from German literature. This article tracks, and indeed finds, remains of the bear's "former royal dignity" in the legend of St Gallus (*Vita Galli, *8th century, German translation in the 15th century), in the animal epic* Reynke de Vos *(1498) and in the heroic epic* Nibelungenlied *(around 1200). An additional sideways glance at the tale of* Schrätel und Wasserbär, *or* Kobold und Eisbär *(late 13th century) sheds light on these findings from a different perspective. Even if it cannot be proven beyond doubt that knowledge of the brown bear as the "old king of animals" was actually still present in the minds of authors and audiences, the readings referred to in this article show that the above texts gain in depth when bearing this in mind, although with an interesting result: Whether the bear is the "royal vassal of the king of kings"* (Vita Galli), *a "rejected alternative to the king"* (Reynke de Vos), *the "representative of a royal competitor to be eliminated"* (Nibelungenlied), *or the origin of a myth about a rural household spirit as a "royal gift with consequences"* (Schrätel und Wasserbär) – *in all cases showing traces of his "royal dignity" – Pastoureau's thesis of the bear as a king-no-more nevertheless finds confirmation.*

Introduction

Certainly, there are more prominent animals in medieval German literature than the bear – just think of the omnipresent horses, of the many dragons to be defeated, of Iwein's lion, or of the fox protagonist in animal epics. Not even the Old and Middle High German (MHG) versions of the *Physiologus* contain a chapter on the bear.[1] One also searches for him in vain in the large fable collections by Stricker, Ulrich Boner, or Heinrich Steinhöwel.[2] Coats of arms with bears are found much

1 Cf. *Der altdeutsche Physiologus* (without bear!). Henkel (1976, 42 note 113) mentions the bear among those animals that do not belong to the inventory of the *Physiologus* ("unter den Tieren […], die nicht zum Physiologus-Bestand gehören"), only to be found later on in the *Novus Physiologus*. On the bear in MHG texts of spiritual allegoresis of nature, cf. Schmidtke 1968, vol. 1, 247–249.

2 The catalogue of Dicke/Grubmüller 1987, 50–52, lists only Cyrillus' fables and fables of the early modern period

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1091–1106 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134379

less frequently than coats of arms with lions and eagles,[3] and bear coats of arms in literature are few and far between.[4] Dreams of bears in medieval German literature are quite modest in number,[5] and Konrad von Megenberg, in his *Buch der Natur,* limits himself to an uncommented replication of the bear chapter from the Latin original, an abbreviated version of the *Liber de natura rerum* by Thomas of Cantimpré (which specialists refer to as redaction III or Thomas III).[6]

These findings seem to fully confirm Michel Pastoureau's thesis of the bear as the "fallen king" (Pastoureau 2011 [French original edition 2007]): At first glance, it appears that the Christian Middle Ages successfully eliminated the former "king of the forest" (Pastoureau 2011, 2) not only from the German forests, but also from German literature. However, there are striking bear appearances in medieval German literature, which superficially speaking seem to confirm Pastoureau's thesis, but at the same time acquire a deeper meaning against the background of the "old royal dignity" of the bear.

Vita Galli: The bear as a royal vassal of God

Late antique and early medieval hagiographies constitute important ground on which Pastoureau builds his thesis. In these legends, wild bears obey the saint's will, even though this is very much against their nature. These bears are, as it were, "domesticated" (Pastoureau 2011, 89–90, 95–105). In principle, the *Vita Galli* (VG) in the adaptation by Walahfrid Strabo (833) and its German translation (VGdt, extant in the St Gallen Codex 602, fol. 14r–15r, originating in 1460) also follow this pattern: Gallus tells the bear to fetch wood for a fire, a task which the bear willingly fulfills (Fig. 1). He is rewarded with a loaf of bread, but is then expelled from the valley forever. The deacon Hiltibod pretends to be asleep and observes everything, recognising the holiness of Gallus in this encounter with the bear.

In addition to *ursus* ("bear"), the Latin text uses the entire array for naming wild animals when designating the bear. Thus the narrator lets the *homo Dei* ("man of God") speak *ad feram* (VG 11–12; "to the wild animal"), which the MHG text renders with *zuo dem wilden tier* (VGdt 8–9). The saint addresses the animal as a *bestia* (VG 12; "animal", "wild animal", "beast of prey", "beast"), as do both the narrator (VG 21) and Gallus's companion at later points in the text (VG 23, here "classifying" it among the *bestiae heremi*: "animals of the wilderness"), which the MHG text always renders as "animal" (VGdt 9, 21, 23–24: *tier der wüsty*). When the bear turns around to obey the saint, the narrator finally uses the name *belua* (VG 13; "wild beast/monster"), which the German text translates again as *daz wilde tier* (VGdt 11; "the wild animal"). Only in the Latin text does the bear appear anthropomorphised as *famulans* (VG 16; "servant"), when he is given bread and accepts it. However, in the German-language text, Gallus gives the bread *dem wilden tier* (VGdt 14; "to the wild animal"), and it is *der bär* (VGdt 15; "the bear") who takes it. Here, then, the bear remains a bear, a wild animal.

It is, however, striking that this bear is a rather "unbearlike" bear from the start: It picks up *gewarsamklich* (VGdt 6; "prudently, carefully"; see VG 11: *caute*) the *brösemly und die stükly* (VGdt 6–7; "crumbs and remains"; see VG 10: *micas et fragmenta*) given by the men (quite in contrast to the bears of other bear legends, who devour the saint's draught or pack animal), and willingly obeys the saint, although the saint actually demands the bear's service for no reason other than *in dem namen des her-*

(K41–K45); even the index entries for the keyword *bear* do not lead to famous fables.

3 Scheibelreiter 2009, 39; in a prominent position, the bear of Berne: cf. Schmid 2000; cf. also Franz 2011, 53–58.

4 Hartmann 2009, 173, mentions a bear paw coat of arms in Heinrich von dem Türlin's *Crône*.

5 Consider Daniel's dream of the bear as the representative of the Persian Empire in the *Annolied*, str. XIII, and in the *Kaiserchronik*, verses 526–594 (cf. Fiebig 1995), as well as the bears from Charles's dreams in the *Rolandslied* by the priest (*Pfaffe*) Konrad, 3076–3082 and 7083–7127 (cf. Van Well 2016, chap. VI.3). Another dream about a bear occurs in *Kaiserchronik,* 14202–14211 (I'd like to thank Dr. Corinna Biesterfeldt for this reference).

6 Konrad von Megenberg, *Buch der Natur*, Kap. III.A.68; see also Thomas III.

ren (VGdt 9–10; "in the name of the Lord"; VG 12: *in nomine Domini*). In the Gallus legend, the order to collect wood for the fire (!) is not meant as a punishment or as compensation (in other legends, the bear has to replace the devoured draught or pack animal), but rather means a step in the direction of civilising the wilderness, which is also mirrored in the subsequent handing over of the bread: The service of the bear is rewarded, saint and bear have thus entered into a quasi-vasallic exchange relationship. One could even go as far as seeing in the bear receiving a *panem integrum* (VG 15–16; "an entire bread"; VGdt 14: *ain ganz brod*) an image of the Last Supper and thus the Christianisation of the bear (e.g. Schär 2011, 456; in contrast to Nef 1982, 105, for whom the sharing (!) of bread would have been an impermissible and dangerous closeness to communion ("das Teilen [!] eines Brotes […] eine unzulässige und gefährliche Annäherung an die Kommunion").

With Gallus's second order, the bear – again in the name of the Lord – is now expelled from the valley. It is in the Steinach valley, where Gallus will establish a hermitage, which will later become the Abbey of St Gall. The bear's habitat is limited to the mountains, so that it can no longer harm people or cattle (VG 19; VGdt 18–19). This again brings up the image of the "evil" and "dangerous" bear (hence there can be no question of a "domestication" of the bear in the strict sense). Max Schär interprets the scene as a division of the habitat ("Teilung des Lebensraums"): The wild animal is not chased away or exterminated, but is given a living zone, which is, however, circumscribed and delimited by humans. So man appears as master and the animal as servant (Schär 2011, 456: "Das wilde Tier wird nicht verjagt oder ausgerottet, sondern erhält einen Aufenthaltsbereich, der allerdings vom Menschen umschrieben und abgegrenzt wird. So erscheint der Mensch als Herr und das Tier als Knecht."). I do not share this conclusion and instead contend that the animal remains "master" of the mountains, even if this role is assigned to him by the *man gottes* (VGdt 21; "man of god"; VG 20–21: *vir Deo carus*, "the man who is dear to God"), the representative of the "greatest Lord". However, the peaceful coexistence of humans and animals in the same habitat – as Schär has remarked correctly – anticipates Isaiah's "animal peace" (Isa. 11,6–8): By the saint and the wild animal encountering in peace, you almost want to say: in eucharistic community, the kingdom of God appears (Schär 2011, 457: "Indem der Heilige und das wilde Tier sich im Frieden, man möchte fast sagen: in eucharistischer Gemeinschaft begegnen, scheint das Reich Gottes auf"). This is why Hiltibod shall remain silent about the miracle until he sees the glory of God (VG 24–25; VGdt 25–26).

In narratological terms, the bear of the *Vita Galli* is therefore more than just the antagonist of the sacred, the evil that is overcome. It is more than a random wild animal that is made submissive by virtue of the saint's holiness (Obermaier 2007, 46; cf. Alexander 2008, ch. 3). If the bear is still considered as the old "king of the forest" (and the educated Walahfrid can certainly be trusted to think so), then something really extraordinary is happening here. The "king of the forest" now lives in peaceful coexistence with the representatives of the "king of kings", even if he is restricted in his rule and is now an obsequious (but nonetheless royal) "vassal of God". However, whether this thought was still present in the minds of the 15th-century German audience remains questionable.

Reynke de Vos: The bear as a rejected alternative to the king

The medieval animal epic made the wolf and not the bear into the fox's antagonist. The Carolingian (!) fable of the sick lion (*Leo aeger* [La], 8th century),[7] which may even be regarded as the nucleus of the fox epic, shows that this could have turned out very differently. In this fable, it is the bear who speaks

7 The authorship is uncertain, and neither Paulus Diaconus nor Notker Balbulus can be conclusively identified as the author (see Ziolkowski 1993, 62).

first and demands the death penalty for the fox (offense: lese majesty). The fox evades judgment by pretending to have sought and found an effective cure for the lion – the bear skin. Moreover, the flayed bear is mocked by the fox: *Quis dedit, urse pater, capite hanc gestare tyaram / et manicas vestris quis dedit has manibus?* (La 65–66: "Who gave you, Father Bear, this tiara [= papal crown] to wear on your head, and who gave you these gloves on your hands?").[8] The bear is no longer king here, but is instead mockingly "crowned" by the fox with the stigmata of his flaying. From the *Roman de Renart* (around 1175) onwards, Brun the bear is only one (minor) figure among many, but as a representative of the clergy he is still part of the animal society at the court of the lion. And his name gives it away: Brun is a brown bear – the prototypical bear in the European Middle Ages (Pastoureau 2011, 166–167).

In the MHG *Reinhart Fuchs* (RF) of the Alsatian poet Heinrich (*c.* 1192), Brun the bear also belongs to the nobility and, as a *kapelan* (RF 1511), is a member of the royal court chapel and advisor to the king (RF 1528: *des kvniges rat*). He appears at the trial against the fox as *vorspreche (*"advocate" – today we would say: lawyer) of the wolf Ysengrin (RF 1366–69) and as a court messenger. It is also he who, based on his profound legal knowledge, advises Reinhart to take the "oath on the dog's tooth" to trap him (RF 1126). By doing so, the bear arrogates the role of the cunning fox in a certain way. Perhaps this scholarly aura is the reason why the fox addresses the bear as *edeler schribere* (RF 1525; "noble scribe"), but it may also contain a perfidious play on words: a *schri-bere*, a "scream-bear" is what the bear will be when, after the honey adventure instigated by the fox, he is almost beaten to death by the farmers (RF 1555). In the honey adventure, the bear finally presents himself again with all the negative properties the Christian Middle Ages ascribe to him: stupidity, greed, voracity.[9] It is no coincidence that the fox's warning *werbet mit sinnen* (RF 1547; "act with understanding") remains unheard, and, significantly, it is the head (!) that the bear pushes *in daz bloch* (RF 1550; *bloch* is "the tree trunk" which becomes a "trap" for Brun, and finally a kind of "pillory"; cf. Widmaier 1993, 98–99). In the tradition of natural history, the bear's head is considered "weak", a belief which was initially only related to its physique, later to its mental abilities.[10]

For Pastoureau, the honey adventure – along with other episodes of the *Roman de Renart* tradition – marks the sad climax and end point of the "dethronement" of the bear by the Christian Middle Ages: The bear appears as "a stupid animal, ridiculous, humiliated" (Pastoureau 2011, 167).

In addition to the honey adventure, there is however another episode in the Middle Low German *Reynke de Vos* (RdV; 1498) in which the bear plays a central role: Reynke's conspiracy lie. Convicted and already standing under the gallows, Reynke accuses his accusers Brun the Bear, Ysegrim the Wolf, and Hyntze the Cat (and, to make it more credible, also his friend Grymbart and his own father) of plotting to install the bear as king, a coup which Reynke, however, claims to have successfully thwarted. The fox is thus "lying the bear" to where his place used to be according to Michel Pastoureau: on the throne (Obermaier 2016, 138: "Der Fuchs lügt damit den Bären dorthin, wo er nach Michel Pastoureau ursprünglich einmal war: auf den Thron."). But even in Reynke's web of lies, the scheme does not originate from the bear himself, it is rather represented as an idea of the fox's father. Reynke, however, claims that this corresponded to the bear's long-cherished wishes (RdV 2154: *Wente he des lange hadde begherd* "because this was his wish for a long time"). The text, though,

8 Reading it as a "political allegory" is possible, but, according to Ziolkowski 1993, 65–66, not imperative.

9 It is certainly no coincidence that in a 1463 print of Vincent of Beauvais's *Speculum historiale,* on Maître François's illustration of the seven deadly sins, it is the bear that rides on *gula*, hence gluttony (!), which is here impersonated by a clergyman.

10 Cf. Plinius, *Naturalis Historia*, lib. 8, 54, 130: *invalidissimum urso caput* ("the weakest part of the bear is the head"). Albertus Magnus, *De animalibus,* lib. 22, §107, ultimately places the weakness in the brain. An interpretation of the scene that focuses on the physicality of the bear was recently offered by Darilek 2020, chap. 3.2.

knows nothing of the bear's possible ambitions for the throne; nor is it about the reinstatement of a former king. Nevertheless, Reynke's lie makes use of the idea of the bear as the "former (!) king of the animals" – should this idea still be present at all around 1498 – insofar as Reynke represents the bear as a traditional (!) king model, namely the model of Caesarean power (Reemtsma 2013, 165–166: "Modell caesareischer Macht"; cf. also Obermaier 2016, 141). Furthermore, Reynke does not leave out any of the usual negative stereotypes in order to denigrate the bear. In Reynke's narrative, the bear appears as an animal of the wilderness, not of courtly civilisation (RdV 2147); he is *schalck vnde quaet* (RdV 2219; "bad and nasty") and *vul van groter ouerdaet* (RdV 2220; "very presumptuous"). Reynke calls the bear *eynen bur* and *eynen vneddelen vrad* (RdV 2229; "a peasant" and "a common glutton") – a picture confirmed by the honey adventure (RdV, chap. 6–9) and the glosses (see Obermaier 2016, 140 note 12). This conspiracy was undertaken *[n]ot myt god, men des duuels macht* (RdV 2166; "not driven by God, but by the devil"). The bear is thus "demonised" by the fox in the same way, according to Pastoureau, as by the medieval clergy (Pastoureau 2011, 113–134). Yet it is the fox who is playing a devilish game here, which the fox perhaps even suggests himself by adding *Vnde myt mynes vaders ghewelde* (RdV 2167; "with the help of my father's power/possession"). What stands out though, is that the bear's supposed pretensions to the throne are of no interest to King Noble. He is only interested in the treasure that the fox cleverly and casually mentions (see Obermaier 2016).

But why is it specifically the bear that Reynke "lies onto the throne", and not the Fox father, Grymbart the Badger, Hyntze the Cat, or even his enemy, Ysegrim the Wolf? The prologue of the story recounts that within the hierarchy of Reynardian animal society, the bear belongs – like the other "*grype[n]*" ("predators", together with the wolf, the lynx, and the leopard) – to the high nobility or to the *vorsten vnd heren der werlt, de syk eddel holden* (RdV, prologue; "to the princes and secular lords who consider [!] themselves noble"). As a representative of the clergy, the badger is ruled out from a legal standpoint, as are the foxes, who as *banreheren* ("bannerets") belong to the lower nobility, and the cat who is probably meant by *vnde der ghelyken* ("and the like"). The only one left is the wolf, to whom the bear is physically superior, just as the bear – within this group of conspirators (which Reynke carefully put together) – is the largest and strongest native predator. Size, strength and nobility (Obermaier 2016, 140: "Größe, Stärke und Adel") predestine the bear to be a royal candidate. In other words: Who else could have been "lied onto the throne" as counter-king to the lion? Certainly, it might be difficult to prove that at the end of the 15th century one still had an inkling of the "former kingship" of the bear and knew about its displacement by the lion. On the other hand, it is against this specific background that the "lion's fall" and "bear's enthronement" (even if they only exist as manipulative suggestions of the fox) gain their humour. The fact that both lion and bear expose themselves as incompetent rulers in the fox's imagination is the icing on the cake (cf. Waltenberger 2013, 219).

One should not forget that this bear (just as the lion, the fox, and all other animals) is an animal of the fable/animal epic which, by definition, stands for a "type of human". But if one considers literary animals according to Roland Borgards as material-semiotic hybrids (Borgards 2016, 236: "materiell-semiotische Mischwesen"), then it should not be a coincidence that it is precisely the role of the strong but only moderately intelligent, yet all the greedier member of the high nobility attributed to the bear. In doing so, the text makes skilful use of medieval bear roles. As a figure of the animal epic diegesis, the bear in *Reynke de Vos* appears to be at the climax of the process that Pastoureau describes as the "fall of the bear", because here, this animal is nothing but ridiculous (admittedly, the other animals including the lion are no less ridiculous). As a (chess) figure in the metadiegesis of the fox, i.e. within Reynke's web of lies, the bear is again a potential, even if ultimately rejected (!), "aspirant to the throne", a "counter-king" born from the manipulative imagination/fantasy of the fox.

In the *Nibelungenlied* (NL, around 1200, quotes drawn from version B), a bear appears at a significant point, namely in the context of the "murder hunt" on Siegfried staged by Hagen. This bear, however, is not a fable bear, i.e. not a "human type in animal form", but a "real" bear (which in the literary context denotes a bear that is actually meant as a bear within the narrated world).[11]

Researchers see Siegfried's bear hunt as a scene of burlesque character (Krause 1996, 50; Auteri 1998, 53, speaks of "*scherzo*", a "joke"), the humour of which is derived from the contrast to the deadly seriousness of Siegfried's murder.[12] Its function is variously defined as a prediction of Siegfried's death (Thiébaux 1974, 69; Wilson 1981, 252), of the fall of the Burgundians (Wilson 1981, 261), as Siegfried's "last glorification" (Singer 1967, 166: "to give Siegfried a last and most vivid moment of glory"), or as an "emblem" of Siegfried's animal vitality (Schweitzer 1972, 362). The length of the bear episode of eleven (!) stanzas alone (NL str. 943–947, 954–959), in contrast to only a few verses being dedicated to the dragon fight (NL 98.2–4; NL 899.1–4), suggests that it has a deeper meaning.

When the actual hunt is over (NL 940.1) and the Burgundians are already on the way back to their hunting camp, one disturbs *a tier vil griuwelîch* (NL 943.3; "a very gruesome animal"): *daz was ein ber wilde* (NL 943.4; "that was a wild bear"). The adjective *wilde* is the most common epithet for the bear in MHG texts (cf. Friedrich 2006: *bër*). Riding ahead, Siegfried orders a (scent) hound (*bracken*) to be released. The bear flees, but Siegfried follows him and finally catches him with his bare hands (!), remaining unharmed (!). *Kratzen und bîzen* (NL 947.1; "scratching and biting") cannot help the animal against the hunter protected by his horny skin. Siegfried ties the animal to his saddle and brings it alive to the large campfire. At this point, the narrative is briefly interrupted for a final statuesque portrait of Siegfried as the hunter who outshines everything and everyone (NL 948.1–954.2). Previously, Siegfried had already presented himself as an exceptional hunter who almost chased the entire forest empty, so that he has to be asked to leave something for others to hunt as well (NL 937.1–3).

Once they arrive at the camp, Siegfried unties the bear: *dô lôst er im diu bant / von fuoze and ouch von munde* (NL 955.1–2; "then he loosened the fetters from his paw and his mouth too"). The released bear causes great excitement and chaos among humans and dogs in the kitchen camp. The king orders the dogs to be let go,[13] the wrathful bear is pursued with crossbows (*bogen*) and hunting spears (*spiezen*), yet no one except Siegfried can keep up with the bear. In the end, Siegfried kills the bear with his sword; and the dead animal is brought back to the camp.

Why Siegfried first catches the bear for fun and then lets him go in the kitchen camp is just as difficult to understand as his passing on of Brünhild's ring and belt to Kriemhild (NL 677.1–3), an act which further nourishes the quarrel between the two queens over the rank of Siegfried, and ultimately leads to his murder. It is striking (and it has indeed been noted by other scholars) that the wild bear shows parallels not only to Siegfried, but also to Brünhild.[14] She, however, does not find death,

11 According to Borgards (2016, 226–267) this bear is a "diegetic", "realistic" animal.

12 Voorwinden (1995, 167) actually sees in this a possible reason for the choice of the bear.

13 Reichert (2005, 440) points out that the success of the only direct order that Gunther gives in the *Nibelungenlied* is the increase of chaos.

14 Mowatt/Sacker 1967, 89 (to 909): "In one sense, the bear is Brünnhilde, caught by Sifrid, set loose in Burgundian society, captured a second time by Sifrid, and finally rendered harmless. But whereas Brünnhilde was spared penetration and death […], the bear is less gently treated. In another sense, the bear is Sifrid himself, an uncomfortable guest in Burgundian society, a well-meaning disaster (the bear is only trying to run away), and finally a ritual murder victim. And in so far as Sifrid and Brünnhilde are one composite symbol, the bear is the spark in their relationship, that Sifrid stamped out". Glogau (1993, 160) also points – very carefully – to the following (not entirely robust) parallels: As Siegfried

and so the parallels to Siegfried seem more reliable. The bear is just as extraordinary as Siegfried, and nobody can follow the bear and conquer it except Siegfried (NL 959.2). Like Siegfried, the bear also trusts in its strength and believes itself to be safe from its hunters: *daz starke tier dô wânde / vor dem jegere genesen* (NL 945.4; "Then the strong animal believed it could escape the hunter"; cf. NL 920,1–4: The warning dreams of Kriemhild cannot stop Siegfried). In this respect, the bear is "defenceless", just as the betrayed Siegfried will be: *daz tier was umbehuot* (NL 946.2; "The animal was unprotected").[15] Like Siegfried – the hero with his heroic past difficult to integrate into courtly existence – the bear is a foreign body in the courtly environment (cf. Mowatt/Sacker 1967, 89); he wants to go back *ze walde* (NL 955.4; "into the forest"), into the forest of his [= Siegfried's] legendary youth (Fasbender 2007, 19: "den Wald seiner [= Siegfrieds] sagengeschichtlichen Jugend"). Just as the bear causes disorder in the kitchen camp,[16] Siegfried's vassalage deception ("Standeslüge") about his own social rank (NL 384.3) sets in motion an *inordinatio* with devastating consequences. Against this background, Siegfried's "unleashing" of the bear takes on a completely new meaning: The Burgundian court must also be afraid of Siegfried's *munde*, his unleashed mouth, because he could reveal the fraud that happened when Brünhild was wooed, as well as of his *fuoze*, representing his irrepressible strength,[17] for indeed Siegfried would win every race against Gunther, if Siegfried did not politely let him go first. Siegfried's fight with the bear is also a two-fold "foot race" (Schweitzer 1972, 362).

Thus Siegfried's "bear catch" and "bear hunt" hardly correspond to the usual practice (it is rather a "Starkhans" appearance[18] of the best quality); Siegfried uses neither bear traps[19] nor crossbow and hunting spear (in contrast to Gunther's people; see Oehrl 2013, 298, 300–301), nor does he use heavy mastiffs ("schwere Doggen", as customary, according to Lindner 1940, 277), and he does not have a second man with him (a necessary minimum, according to Oehrl 2013, 298). The only reminders of the aristocratic form of bear hunting are the event's purpose – Siegfried promises himself and his fellow hunters *guoter kurzewîle* (NL 944.1; "an excellent fun"; see NL 947.4) – and the final fight "man against bear" (see Oehrl 2013, 305: "a man-to-man combat").[20] The fact that Siegfried finally kills the bear with the sword (!), the combat weapon, has often perplexed scholars (cf. Grosse

catches and ties down the bear with bare hands, Dietrich catches and ties down Gunther and Hagen ("So wie Siegfried den Bären mit bloßen Händen fängt und bindet, so fängt und bindet Dietrich Gunther und Hagen [39. *aventiure*]."; see Reichert 2005, 521–522); the bear is killed by Siegfried with his sword Balmung, Kriemhild has Gunther beheaded and beheads Hagen with Siegfried's own sword ("Der Bär wird von Siegfried mit seinem Schwert Balmung getötet, Kriemhild läßt Gunther enthaupten und schlägt Hagen, gleichfalls mit dem Schwerte Siegfrieds, den Kopf ab.").

15 Translating as "careless" ("sorglos"), although done by NL (Brackert), NL (Bartsch/De Boor), or by Reichert 2019, 149: "unvorsichtig" ("incautious") or "schutzlos" ("vulnerable, defenceless"), is probably wrong, as already stated in Matthias 1883, 500 note 1, as taken from Heinzle 2013, 1249. Like Auteri (1998, 55–56), I see this being without protection as a consequence of the overconfidence that the strong one could escape the hunter.

16 On this, see Müller 1998, 425: The flaw of the meal reflects the disruption of social relationships ("Der Defekt des Mahls bildet die Zerrüttung sozialer Beziehungen ab").

17 Inasmuch as MHG *munt* and *fuoz* refer not only to the human mouth/foot, but also to the animal mouth/foot, the fact that *fuoz* and *munt* are used with regard to the bear is not, however, an indication that it is actually the human Siegfried that is spoken of, see Griebel 2020 (*fressen/essen*, etc.). Siegfried had tied the bear exactly where it is most dangerous, at the mouth (teeth!) and paws, because in the front (*brachiis* "arms") and hind limbs (*lumbiis* "loins") the bear has great strength, as Thomas of Cantimpré (*Liber de natura rerum*, lib. 4, 105,2–3), Konrad von Megenberg (*Buch der Natur*, 188,13–14) and other medieval scholars of natural history knew.

18 Panzer (1955, 358) conjectures that oral narratives based on motifs from tales of Strong John ("Starkhans") or Bear's son ("Bärensohn") are the sources for this episode (see also Hirsch; Frank, this volume).

19 Oehrl (2013, 298–299) provides an overview on the most common bear traps; see also the description in Lindner (1940, 305: traps with weights, 313: weapon-based traps, 316: pit traps, 332–334: nets). On catching a bear with a club next to a natural bee hive, see also Bindschedler 1985.

20 Here we see again clearly why the bear is considered the "perfect quarry" for the aristocrat: The bear is – as Oehrl (2013, 304) states – a "very fast runner" and "enormously strong", it "can be very aggressive" and is "a powerful puncher". His "manlike behavior" makes him a worthy opponent, so that one can understand "bear hunting as a man-to-man combat".

2002, 829: Why Siegfried hunts with the sword remains unclear ["Warum Siegfried mit dem Schwert jagt, bleibt unklar"]), but the use of the sword is perhaps not that strange at all (see Oehrl 2013, 302–303 and note 12; cf. the term *[bēr-/swīn-]swert* for a weapon for wild boar hunting in Dalby 1965, 19, 236). In this respect, caution is required towards interpretations which read the use of the sword for hunting as exuberant disdain for the symbols of chivalry (Reichert 2005, 444, cf. 430: "übermütige Geringschätzung der Symbole des Rittertums"). But even my first, attractive thesis that it is the "courtly" Siegfried (here appropriately referred to as *Kriemhilde man*, NL 959.2; "Kriemhild's husband") who kills the "mighty hero" Siegfried cannot be maintained, even if it is precisely Siegfried's courtliness that supports his murder at the spring (see NL 975.3–4).[21] The sword with which Siegfried kills the bear is likely to be the double-edged sword Balmung – that is the weapon of the "splendid hero" from the Nibelungenland – which was mentioned just prior in Siegfried's description (NL 952.1). So this sword is precisely not "a symbol of the courtly world" (Auteri 1998, 59: "simbolo del mondo cortese"). The commentary on Siegfried's murder in the bear episode is therefore to be read differently: Siegfried kills himself in the bear (Wilson 1981, 252, speaks of "self-destruction"), thus acting simultaneously as the killing subject (!) and as the killed object (!). Both aspects define Siegfried as being Siegfried (just as this inserted statuesque portrait again illustrates). In the death of the bear (= Siegfried) by Siegfried's own hand, the perfidious paradox of the "murder hunt" is represented by an impressive picture: Siegfried kills himself by taking part (as the hunter) in a hunt which actually applies to himself (as the hunted; cf. Tally 1983, 128).[22]

Hagen's calculation works: A competitive hunt (instead of a war-campaign) for *bern unde swîn* (NL 908.2: "bears and wild boars") or *swîn / bern und wisende* (NL 913,3–4: "wild boars, bears and wisents") is entirely to Siegfried's taste, because in the wild boar hunt (Wilson 1981, 250), which is particularly dangerous due to the direct confrontation between humans and animals (Wilson 1981, 250), he can – and indeed does – show that he is ein *kreftec man* (NL 960.1; "a strong man"). Siegfried is therefore a "best hunter" by the grace of Hagen (Fasbender 2007, 20: „Siegfried ist also ein ‚bester Jäger' von Hagens Gnaden"), because "the best hunters" will be those who bring down the best hunter (ibid.: „die „*besten jegere* werden die sein, die den besten Jäger zur Strecke bringen").

Let us look again at Siegfried's hunt: The bear is Siegfried's very last (and initially unintended) prey. Siegfried's first prey, which he beats to death with his bare hands, has not yet been clearly identified, and according to the conjecture by Bartsch/De Boor (NL Bartsch/De Boor; following Wilhelm Grimm) it may be a vil *starkes halpswuol* (NL 932.3; "a half-grown but very strong wild boar").[23] Then he shoots with the bow an *ungefüegen lewen* (NL 932.4; "a huge lion") found by his (scent) hound (*bracke*), which only runs three more leaps (!) after the shot (NL 933.3; *drîer sprünge* [!] *lanc*). A colourful list of prehistoric, foreign, fantasy and real big game animals follows (cf. Panzer 1955, 196; Dalby 1965, xvii note 42), and this marks the climax of his being re-mythicised (Fasbender 2007, 20: "den Höhepunkt seiner [= Siegfried's] Re-Mythisierung"). Finally, a large boar (NL 935.1) is particularly emphasised, which he, *der Kriemhilde man* (!),[24] – like the bear later on – kills *mit dem swerte* (!) (NL 936.1; "with the sword"). That the wild boar stands in such a striking position and in

21 See Müller 2002, 73: Siegfried will always be both: magnificent hero and courtly knight, even his murder by the Wormsers will be inferred from this contradiction ("Siegfried wird immer beides sein: Heros und höfischer Ritter, und aus diesem Widerspruch wird schließlich sogar seine Ermordung durch die Wormser abgeleitet werden.").

22 Singer 1967, 173: "Siegfried regards himself a hunter and is in reality the hunted." Or, as the text states: *von helden kunde nimmêr wirs gejaget sîn. / ein tier daz si sluogen, daz weinten edeliu kint* (NL 999.2–3; "Heroes could never have hunted in a worse manner. Noble girls mourned the game that the heroes had slain.")

23 According to Matthias (1883, 493) the wording transmitted by the textual tradition does not allow for an unambiguous identification; recently, Reichert (2019, 148, concerning 932.2–3) drew a similar conclusion.

24 Concerning the well-reflected use of this antonomasia by the poet of the *Nibelungenlied*, see Schweitzer 1972, 360–361.

such a clear parallel to the bear is probably no coincidence, for it corresponds too well to Kriemhild's boar dream, in which Siegfried is hunted down and killed by two wild boars (NL 918.2–3), which are commonly associated with Gunther and Hagen (Van Well 2016, 133–134),[25] although it is Brünhild who has advised to murder (*gerâten*, NL 1007.4), and Kriemhild who has betrayed Siegfried's vulnerable spot to Hagen (NL 900.4). Furthermore, the lion might be more than only cock-and-bull-stories or "Jägerlatein" (Bartsch/De Boor 1988, 156, concerning NL 935.2; so Reichert 2019, 148 concerning the passage altogether): Around 1200, the lion is the royal symbol *par excellence* (Jäckel 2006), so it is all the more remarkable that the lion does not rank first here. For Gale L. Wilson, the hunt gives an "image of Siegfried destroying his own enemies" on the one hand (Wilson 1981, 252), and on the other hand all these animals reflect different facets of Siegfried (Wilson 1981, 254–255, 260). Both interpretations seem problematic to me and, indeed, completely impossible altogether. Even if the lion's "three leaps" may vaguely call to mind the courtship deception (and the "degraded" lion may remind us of Gunther's leadership weaknesses), such clear correspondences between the hunted animals and the human characters of the *Nibelungenlied* hardly seem possible to prove in the same meaningful manner as can be done with the bear. Nevertheless, one can say that the hunt clearly demonstrates one last time the manifold threat Siegfried represents to the Burgundian kingdom. It also makes clear that in an open confrontation with the Burgundians, Siegfried would have been infinitely superior, without much of an effort.

It is hardly a coincidence that it is a bear that stands for Siegfried; the bear represents the "ancient" king of the animals and thus an "old style" royalty, which with regard to Siegfried means a kingship that – very differently from how one thinks and acts in "courtly" Worms – is still entirely based on strength.[26] Without wanting to overstretch the interpretative opposition between the lion and the bear, the death of the bear makes it clear that in Siegfried – remember Siegfried's provocation at his first appearance in Worms (NL 107.1–108.4) – a powerful competitor to the royal dignity in Worms is eliminated.

A sideways glance – *Schrätel und Wasserbär*: A polar bear as a king's gift with consequences

We encounter a very different kind of bear in the anonymous[27] tale *Schrätel und Wasserbär* (SuW; end of the 13th century, also known as *Kobold und Eisbär,* cf. Williams 1983). In this tale, the king of Norway sends a *Norman* (SuW 22; "Norseman") to bring *einen zamen wazzerbern* (SuW 15; "a tame polar bear") as a gift to the king of Denmark.[28] The MHG word *wazzerber* is only used in this text; the white colour of the bear (SuW 17), its origin from the north, and, last but not least, its value as a royal gift undoubtedly suggest a polar bear. Upon their arrival in Denmark, the bear-leader and the bear take up quarters with a farmer who has lost the rule over his house to a *schretel* (a goblin). That does not scare the Norseman, and they eat and then go to sleep in the bakehouse. But when the goblin begins to make trouble at night, the Norseman hides in the oven. Only the polar bear can successfully defend itself against the goblin, but only after the goblin has tormented it three times with his

25 Schröder (1960, 121) sees – rather problematically – the boar-Hagen association justified in legendary history.

26 This would make clear why Brünhild was also considered (cf. note 28): The bear, Siegfried, and Brünhild are part of an archaic "Germanic" world. Voorwinden (1995, 167), however, considers the bear's function as an announcer of danger or as an announcer of approaching death ("als Ankündiger von Gefahr bzw. als Ankündiger des nahenden Todes"), which the animal fulfills in literary dreams, as a possible reason for the choice of the bear.

27 Heinrich von Freiberg's authorship was disproved by Fischer 1983, 165.

28 The beginning of the story recalls the journey of the Icelander Audun. There is controversy on whether this story belongs to the core of the narrative (cf. Grubmüller 2011, 1264; with a different approach taken by Röhrich 1977, 1221).

spear. The next morning the bear-leader and the bear bid farewell, but while working in the fields, the farmer meets the dishevelled goblin who asks him whether this terrible "big cat" is still with him. The farmer has the presence of mind to reply: *jâ, jâ, mîne grôze katze, / dir ze trutze und ze tratze / lebet sie, du boesez wihtel, noch. /* […] */ vünf jungen si mir hînt gewan;* […] *der alten katzen alle gelîch* (SuW 325–332; "Yes, my big cat is still alive, to anger and to defy you, you evil spirit; [...] she gave birth to five cubs tonight [...], all equal to the old cat"), whereupon the goblin disappears forever.[29]

The polar bear is well chosen for this role. Not only do historical facts confirm that the polar bear replaces the brown bear in his function as a gift for royal menageries (Pastoureau 2011, 58–59; cf. also Schier 1935, 172–173; Paravicini 2003, 591, with examples: 578–579), but its white fur also makes him an animal of great value (Paravicini 2003, 588) and – according to Christian colour symbolism – opposes it, as a "light" and "pure" (even more: "tame") creature, to the "dark" powers of the devilish (and "wild") goblin, which itself wears a red hooded coat (SuW 190). However, the landlord is not completely without fear when faced with the polar bear, as expressed in the question: *waz tieres vüeret ir an der hant? / ist diu selbe crêatiure / gehiure oder ungehiure*? / *daz eislîche kunder, / ist es ein merwunder?* (SuW 68–72; "What kind of animal are you leading by the hand? Is this creature good or bad? This terrible animal, is it a sea monster?"). Therefore, the polar bear has the greatest possible "goblin closeness" and, at the same time, the greatest possible "goblin distance". It is thus, at the same time, an adequate opponent as well as a positive counterpart of the evil goblin.

Martin Todtenhaupt is rightly surprised that the tale's prologue speaks of *hovelicher mære* (SuW 1: "a courtly story" ["einer höfischen Geschichte"]) with regard to the story to be told, although the court "just [sets] the outer framework of the plot" (Todtenhaupt 1977, 302: "nur den äußeren Rahmen der Handlung") and two of the acting figures are essentially "non-courtly figures" (ibid., 304: "zwei von ihrem Stand her nicht-höfische Figuren"). Due to its quality as a "courtly gift" and its white colour, Todtenhaupt sees the polar bear as an excellent representative of the courtly sphere (ibid.: "zum hervorragenden Repräsentanten des Höfischen"), but one that is reduced to purely physical violence (ibid., 305: "rein physische Gewalt"), and which is also sleepy and unwilling (ibid., 304: "schläfrig und unwillig"). As a result, Todtenhaupt wants to see in the tale a program of the late courtly renaissance *en miniature*, which calls for a positive role and identity of the court, definitely in the sense of the high courtly ideal (ibid., 308–309: "eine Programmschrift der späthöfischen Renaissance *en miniature*, die […] eine positive Rolle und Identität des Hofes, durchaus im Sinne des hochhöfischen Ideals, anmahnt"). It is also conceivable, however, that the adjective *hovelîch* does not refer to the content and staff of the tale but only to its stylistic aspects, because this funny story (Williams 1983, 1279: "zum Lachen" [for laughing], cf. Fischer's [1983, 104] classification under "schwankhafte Mären" [humorous tales]) is indeed elegantly designed with all the stylistic devices of courtly storytelling (De Boor 1997, 237: „mit allen Stilmitteln höfischer Erzählkunst elegant gestaltet").

From a narratological point of view, here the bear's status as figure changes in a very striking way. At the beginning of the tale, the polar bear, as a royal gift, is only an object, not a figure (and – in agreement with the prologue – one is tempted to consider the two kings as the protagonists of the coming narrative). The bear only becomes a (co-)figure in the travel part, whereby the relationship between the bear-leader and the bear changes the figure status of both: *dem bern dâ gegeben wart / gein Tenemarken ûf die vart / ein wegewîser villân* (SuW 19–21; "The bear was given a farmer [i.e. the Norseman] as a knowledgeable guide on the way to Denmark"). On the one hand, the bear-leader is given to the bear as a companion, on the other hand, grammatically the bear-leader is the subject. The relationship is described "the other way round" at the end of the section: *im folgte an siner hant der*

29 On controversially discussed parallels with the 13th-century Middle Dutch poem *Van bere Wisselau* and with the Thidreksaga (in which a man disguised as a bear defeats the giants), see Taylor 1919, 309–311; Röhrich 1977, 1221–1222.

ber (SuW 42; "the bear was following him, being led by the hand"). Here the bear is indeed the grammatical subject, but he appears as a companion to the human figure. The *wirt* (i.e. the "landlord"), at whose property they stop for refreshments, also perceives the bear as a companion to the bear-leader; and in this function the bear also becomes the object of speech (!) for the two human figures. However, at the request of the bear-leader (v. 144–145) the bear is also "catered for". Thus, in this part, the bear is one (animal) figure among other (human) figures. Only in the nocturnal fight with the goblin does the bear become an actor, indeed the main character, the protagonist of the tale.[30] In contrast, the goblin is and constantly remains in the role of the antagonist (of the host and his visitors and thus of the bear). The real highlight of this little story, however, is that in the conversation between the landlord and the goblin on the morning following the night of the fight, the bear (as the "big cat" that has had five young ones) becomes the character of a metadiegetic story. This turns the peasant landlord into the narrator/inventor of a (fictional) story that finally drives the goblin away (whereby the point is about more than just a scare, cf. Linhart 1995, 428–429).

The physical presence and the corporeal superiority of the polar bear can only solve the landlord's goblin problem for a short time. But the physical presence of the bear and, even more, the goblin's memory of the physical violence it has experienced are essential prerequisites for the peasant's narrative of the polar bear, as the "big cat" with five kittens, to be invented at all and ultimately have a lasting effect. The bear teaches the goblin fear, and the bear's success as well as the goblin's fear allow the farmer to recognise his own fear of the goblin as surmountable. He can thus regain power over events and above all over his own homestead. The bear is therefore not only a "gift among kings", its temporary presence is also a "gift to the farmer" – a gift that the farmer knows how to use for himself, with cunning compensation for his lack of strength (cf. Todtenhaupt 1977, 304).

For the goblin, the polar bear is not a ghost (as the goblin is for the peasant), but rather it "rationalises" the animal that is unknown to him, into a "cat" with gigantic dimensions. This "translation" into the peasant's imaginary world appropriates the narrative of the farmer, as does the enlargement process by inventing a whole "giant cat clan" in addition to the "giant cat". One is tempted to see the lion in the "big cat", who, according to Pastoureau, replaces the bear, albeit the brown bear (!), as king of the animals (Pastoureau 2011, 3; cf. also 135–155). The lion was only classified as a (predatory) cat after the Middle Ages; such classification is alien to medieval natural history, just as the polar bear is also not the former "king of the forest". Nevertheless, it should be more than a witty contrast that here the polar bear appears as a "big cat" because in the Middle Ages the cat is an important farm animal as a mouse catcher (Walker-Meikle 2012, 10), and so in its function of freeing the house from annoying pests, the polar bear is actually a "cat".

The peasant's cunning turns the polar bear from a "king's gift" into the "founding father" of a new (fictitious) family genealogy for the long-term security of his own rural power over house and farm. Understandably, the creature cannot take over this function as a "royal" polar bear, but only if modified into an animal fitting his new role as household spirit and his new rural environment, precisely as an imaginary fabulous cat. Thereby, the tale is not only a nice story with an amusing punchline (De Boor 1997, 236: "eine hübsche Geschichte mit einer amüsanten Pointe"), but also a lesson on the power of myths.

30 Jannidis (2004, 103) mentions the following as possible criteria for a main character: The main character is involved more actively in the continuation of the plot than the secondary character; a main character is a character who takes up more space in the presentation than a secondary character; a major character is [...] any character who participates in significantly more events than the other characters ("Die Hauptfigur ist aktiver an der Fortführung der Handlung beteiligt als die Nebenfigur." / "Hauptfigur ist eine Figur, die einen größeren Raum in der Darstellung einnimmt als eine Nebenfigur." / "Eine Hauptfigur ist […] jede Figur, die an bedeutend mehr Ereignissen partizipiert als die anderen Figuren.").

Conclusion

This short overview on bears in medieval German literature makes it clear that reflections of the former royal dignity of the (brown) bear cannot be proven beyond doubt, but interpretations gain in depth upon inclusion of this dimension. In this regard, the bear of *Vita Galli* does not just appear as the wild animal obeying the saint. When the "king of the forest" as "vassal of God" willingly serves the representative of the "king of kings" and accepts the restrictions placed on his habitat, the bear is indeed only a "king with limited royal power", but he is still a king. In Reynke's conspiracy lie in *Reynke de Vos*, however, the bear becomes the "rejected alternative to the king". He is "conceivable as a king", but basically no longer worthy of royal dignity – and not just in the eyes of Reynke, who makes the bear the representative of an outdated rule model. As a "sign of a past form of royalty" based entirely on strength, the bear in the *Nibelungenlied* is the ideal embodiment of Siegfried. In the image of the bear it appears clearly that with Siegfried a powerful competitor for the royal dignity is eliminated. The fact that Siegfried kills himself in the bear is less a comment on the question of his guilt than an impressive picture of this paradoxical "murder hunt", which turns the hunter into the hunted. The tale *Schrätel und Wasserbär* should be seen slightly differently. Through his very nature, the polar bear cannot contain reflections of the old "king of the forest". His only affinity to royalty is that he is handled as a "gift among kings". His successful nocturnal fight against the goblin also turns the bear into a gift for the peasant landlord. The latter reinvents the bear – in the shape of the "big cat" who gave birth to five young ones – as the "prime ancestor" of a new (fictitious) family genealogy of household spirits and thus regains permanent power over his farm and his lands.

As a "royal vassal of the king of kings", as a "rejected alternative to a king", or as a "representative of a king's competitor to be eliminated", the bear is no longer a king, even where his old royal dignity can still be meaningfully included. As a "king's gift with consequences", he even becomes the origin of a rural household spirit myth. Even where traces of the "old royal dignity" of the bear can still be sensed, it seems confirmed that the bear is indeed a "fallen" king in the sense of Pastoureau.

(Translation: Larissa Birrer)

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Fig. 1. St. Gallus and the bear (© St. Gallen, Stiftsbibliothek, Cod. Sang. 602 – Deutsche Heiligenleben, pag. 44; AD 1451–1460; NonCommercial 4.0 International [CC BY-NC 4.0]).

"The Bear's Son Tale": Traces of an ursine genealogy and bear ceremonialism in a pan-European oral tradition

By Roslyn M. Frank

Keywords: Bear ceremonialism, animism, relational ontology, Basque, Ursus arctos

Abstract: The most widely disseminated set of European folktales is the "Bear's Son Tale" (ATU 301), also known as "John the Bear", whose main character is the offspring of a bear and a human female. The possible implications of the ursine genealogy central to the structure of these stories is explored, starting with a discussion of the way the tales have been treated by folklorists up until now, including how they have been classified in ways that leave aside the ethnographic evidence for real world manifestations of the ursine genealogy. In contrast, I have attempted to identify the intangible remains of this animist ontology and how it is embedded in well-documented beliefs, traditions, rituals and performance art across much of Europe and most particularly in the Pyrenean region. Central to the endeavor has been the work I have carried out for many years on the Basque culture and language which allowed me to discover that the Basques used to believe humans descended from bears, a belief in consonance with the tenets of circumboreal bear ceremonialism. Two aspects of this widely disseminated set of European folktales will be highlighted. The first is how the folktales have acted to transmit the belief in an ursine ancestry across time, while the second is the way the animist relational ontology embedded in the tales can provide a means of accessing the extra-textual imprint of the belief system in the real world.

Introduction

For the past forty years I have explored the ramifications of an archaic belief that I encountered while doing fieldwork among the Basque people back in the early 1980s, namely, that Basques used to believe humans descended from bears. Although my informants had alluded to aspects of this belief indirectly, it was not until the late 1980s that a report documenting the belief was published (Peillen 1986). Up until that time it had been passed orally from one generation of Basque speakers to the next, who were always careful not to share the information with non-Basque speakers. Soon after I had discovered the existence of this ursine genealogy, other bits and pieces of ethnographic evidence began to fall into place, among them folktales that speak of a young woman who mates with a bear and gives birth to a half-human, half-bear offspring. Once the ursine origin of humans was plugged into the interpretive frame of these stories, the adventures of the hybrid being took on a new significance. As a result, I began to process other European ethnographic data through a different lens, one that was no longer purely anthropocentric in nature, but rather animist, informed more by what has been referred to in recent years as a relational ontology (Bird-David 1999; Harvey 2006; Harrison-Buck 2018).

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1107–1120 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134380

Whereas evidence for belief in an ursine genealogy has been well documented among North American and Eurasian indigenous peoples (Hallowell 1926; Rockwell 1991), that such a belief once shaped the daily lives and social practices of Europeans had not been contemplated until quite recently (Bertolotti 1992; 1994; Shepard/Sanders 1992; Lajoux 1996; Shepard 1999; 2007; Pauvert 2014). Yet there are many folkloric traces pointing to the veneration of bears, particularly in the Pyrenean region and even more concretely in Euskal Herria, the historical Basque Country (Fig. 1).

However, it was not until the end of the 20th century when the Basque anthropologist Txomin Peillen published his interview with the last two Basque-speaking bear hunters of Zuberoa – an elderly father and his son – that we had concrete written evidence of the mindset that accompanied this archaic belief (Peillen 1986). It appears that the belief had been circulating orally for a long time, but that it was never shared with non-Basque speakers (Frank 2008b). In that interview, after the tape-recorder had been turned off, Petiri Prébende, the father, started talking about bears, namely, European brown bears (*Ursus arctos*). And when he did, he stated the following: "Lehenagoko eüskaldünek gizona hartzetik jiten zela sinhesten zizien" ("Basques used to believe that humans descended from bears"). He went on to talk about the power of bear paws and how the bear had created human beings (Peillen 1986, 173).

Hence, evidence emanating from the Pyrenean zone, most especially from zones in which Euskara (Basque), a language classed as pre-Indo-European, was or is still spoken, should be examined with care. Moreover, there is substantial evidence that bears played a special role in the wider belief system of Europeans; that the veneration and respect paid to bears may well have been grounded in a similar understanding, one that allowed bears to be viewed as ancestors and kin as well as being endowed with supernatural powers (Lajoux 1996; Frank 2008a; 2009; Pastoureau 2011; Corvino 2013).

Overview of the folktales

Over the past twenty years I have endeavored to lay out the possible implications of a specific set of European folktales in which the main protagonist is portrayed as having an ursine ancestry. His father is a bear and his mother a female human. The tale is known as "The Bear's Son", and along with its variants it is probably the most widely disseminated European folktale ever recorded (see Hirsch, this volume). The term utilized here, that is, "The Bear's Son", is an informal one, used in conjunction with "John the Bear" to refer to a group of related narratives, categorized formally by folklorists as tale type ATU 301.[1] However, the worldview reflected in the storyline with its half-human, half-bear protagonist has never been the subject of serious investigation. Questions have never been asked concerning the reason that the hero was assigned this genealogy in the beginning. Neither has there been a concerted attempt to study the European tale in a comparative light, that of the hunter-gatherer animist cosmology implicit in stories found among Native Americans and Siberian peoples where bears are considered ancestors and therefore kin. In those tales a woman often marries or mates with a bear and has offspring, a plotline that reflects the ursine genealogy and the veneration of bears that went along with this relational ontology (Hallowell 1926; Barbeau 1945; Wallace 1949; Rockwell 1991, 116–125; Shepard/Sanders 1992).

Some of the most well-preserved versions of the European tales, including those evidencing the most archaic structural elements and most undisturbed plotline, emanate from former Basque-speaking

1 In 2004 an updated version of the Aarne-Thompson tale type index (Aarne/Thompson 1961) was published (Uther 2004). Although in the present chapter tale types will be referenced as ATU (Aarne-Thompson-Uther), I would note that value and use of tale type indexes, including the most recent iteration of them, have been called into question (Goldberg 1984; Dundes 1997; Jason 2006).

zones of France and Spain and from the current Basque-speaking region itself.[2] It is noteworthy that the most archaic variants of the tale are found in the westernmost part of Europe, especially in the Pyrenean zone and its immediate environs, for this is the same zone in which the belief in bear-ancestors continued to circulate into the 20th century and where performances featuring ritualized bear hunts still take place each year (Bakels/Boer, this volume; Gastou 1987; Truffaut 1988; 2010; Pauvert 2014; Gual 2017). Further research concerning this core belief points to the strong possibility that it was once present across much of Europe. Even though explicit references to the ursine genealogy of humans have not been documented in the rest of Europe, as will be shown, there are many cultural practices and beliefs that point to the previous veneration of bears and bear-ancestors (Frank 2008a; b; 2009; Pastoureau 2011; Corvino 2013).

Summary of the Bear's Son Tale

After comparing the storyline of many dozens of the European versions of these tales as well as variants of them taken to North America in centuries past, the contours of the earlier plot slowly came into view. What also became clear is that some versions contained plot elements that were more archaic than those found in other variants in terms of the implied worldview, completeness of the storyline and the logic embedded in the sequence of episodes that make up the plotline. As might be expected, this was the case of the certain folktales collected in the Pyrenean region where, as we have noted, evidence for the belief in ursine ancestors was still circulating well into the 20th century.

Before continuing, a few words are in order about the methodology used in the analysis of the variants of the Bear's Son Tale. If a researcher has several versions of a manuscript – in this case many versions of a folktale – and it is one with no known original, then established methods of textual criticism can be used to reconstruct what appears to be the earliest version of the text. One of these methods is called stemmatics. I have applied an updated version of this method as described by Frog (2013). The approach involves comparing extant versions of a text to identify the commonalities, additions and modifications that show up. As part of that task, one is concerned with the cultural conceptualizations that surface in the variants. These can suggest why certain structural elements were retained, developed, or lost over time. And these structural components of the plot are linked to the strength of the conceptual frames that were operating in the background, shaping the production and modification of the plot and the nature of the characters. In this instance special attention has been placed on identifying clues in the texts for the belief that humans descended from bears and for the animist relational ontology which supported that belief.

In the plot summary that follows, the protagonist is referred to as Little Bear. The tale begins with a description of a young woman who is out walking in the woods, when suddenly she meets a bear. In some versions it is a very handsome bear, and she goes off with him to his cave. In others the bear, being more brutish, grabs her and carries her off against her will. Sometime later, a child is born, half-bear, half-human. Years pass, and one day Little Bear decides he wants to leave the den and go out to see the world. He manages to remove the rock that his father places each day at the mouth of the cave when he goes out hunting. Little Bear and his mother escape, and at this point the adventures of Little Bear commence.

2 Although analysis of the individual tales recorded in the Pyrenean zone lies outside the scope of this paper, there are many written sources (Vinson 1883, 90–92; Barandiaran 1973–1983, II, 301–305; Satrústegui 1975, 18–21; Bidart 1978, 80–83; 1979, 130–137; Arratibel 1980, 65–74; Cerquand 1986, 78–85; Barbier 1991, 84–94, 129–132, 151–152, 157–158).

Early on, he has an encounter which allows him to acquire his Animal Helpers. Walking along a path in the woods, he spies four animals ahead of him standing next to the carcass of a deer. They are a lion, a dog, an eagle, and an ant. Lion calls out to him: "We're hungry and have been arguing about how to divide up the meat. Can you help us?"[3] Little Bear responds saying that he will try. "Lion, I'll give you the haunch which is what you like best." And to Dog, he gives the ribs. Addressing Eagle, he says: "To you I'll give the innards and intestines because you don't have any teeth, and this is what you like best." Finally, to the tiny Ant, Little Bear says, "To you I'll give the skin and bones and when you've eaten the marrow from the bones you can use them for your house when it rains." With that, Lion responds: "You've done so well with the division that we want to reward you." And each of them gives him a talisman, telling him that when he requires their help all he needs to do is touch it and call out the animal's name. That way he will gain the animal's innate abilities and take on the shape of the animal in question. Lion gives him a tuft of fur, Dog another tuft, the Eagle a feather, and little Ant a leg because she has several.

Time passes, and Little Bear finds himself at a farmstead where he meets the young woman who lives there with her old father. Naturally, since all good stories need a romantic twist, Little Bear falls in love and wants to run off with the young woman. But she explains that she cannot leave because she must care for her old father who happens to be immortal. Little Bear insists that there must be a way to get the old man to die.

At this point the first example of shape-shifting takes place, an element typical of an animist mindset. The young woman tells him to come back the next day and enter the garden where she will be combing the old man's hair and removing his lice. Little Bear is to climb up into the tree located next to them and hide in its branches while she asks the old fellow what will make him die. So Little Bear shows up, shape-shifted into an ant, and climbs silently up into the tree from where he overhears the old man's response: "For me to die, the challenger will have to do battle with my brother who is a shape-shifter, too. He will appear as a porcupine and the challenger must show up as a lion and engage in battle with him. If he triumphs, a hare will appear, and the challenger must turn into a dog and catch it." The old man continues explaining: "Once the hare is caught, a pigeon will fly up and my opponent must turn into an eagle, snatch the pigeon, open it, remove the egg inside, and then take the egg and break it on my forehead. When that happens the egg inside my head will break and I will become mortal and die."

Since Little Bear has been pre-equipped with his talismans, he is well able to follow these instructions successfully, shape-shifting into one animal after another, while his opponent does the same. In the end the Little Bear succeeds, and his opponent, having received the fatal blow to his forehead, is no longer immortal. From one point of view, the identity of the antagonist appears to be clear – he is the father of the young woman. However, other versions of the tale point directly to his identification with the serpent or dragon who is killed by a blow to his forehead with the magical egg (Satrústegui 1975, 18–21; Frank 2019).

A closer analysis of the plot brings into view other cultural conceptualizations that informed the interpretive framework for the tale, revealing it to be an animist ontology typical of hunter-gatherers who lived (or live) in close contact with bears and other wild animals, along with the associated belief in shape-shifting that is firmly embedded in the narrative itself (Hallowell 1926; Brightman 2002; Berres et al. 2004; Brightman et al. 2012). On this view, the backdrop of the story becomes Nature itself, upon which the actions are projected. A child, seeing an eagle swooping down to catch its prey, could have interpreted the scene, symbolically, as an exteriorization of a familiar episode from the traditional narrative.

3 Unless indicated otherwise, the translations are the author's.

When interpreted on this deeper level, what we find in the tale is a series of purely ritual battles between two shape-shifters, one who is already half-bear, and his older adversary. From this perspective, the role of the four Animal Helpers is of fundamental importance to the hero, beginning with the smallest one, Ant. Moreover, there is a pattern to the ritual confrontations: They are encounters between a predator and its prey (Table 1).

In the end, it is the magic pigeon egg that makes the old man become mortal like the rest of Nature, subject to life and death, rather than standing apart as a transcendent immortal being.

Ecocentric coding

There are other lessons that in times past a child might have learned from this story. It is a tale that goes counter to the so-called "law of the jungle", the Social Darwinian view of Nature that interpreted the "survival of the fittest" scenario as the superiority of brute strength and/or self-interest in the so-called "struggle for survival" (Weiss 2010). This is a view that featured prominently in 19th-century thought and is still alive today in some quarters. In contrast to that view of Nature, the equitable division of the dead deer can be read as a parable of sharing and reciprocity in which Little Bear restores the natural order of things. It speaks of the harmony and balance of Nature and the interlocking networks of dependencies that act to maintain that natural order. Large carnivores bring down the prey. Smaller carnivores then approach to eat the scraps. Next in line come the scavenger birds, eagles and vultures. And, finally, the insects arrive to pick clean the skin and bones. Viewed from the perspective of modern conservation biology, the food web described implicitly in the narrative suggests an understanding of the dynamics of "trophic cascades" and the concept of "keystone species," for example, where the actions of large carnivores impact the complex food-web dynamics in positive ways (Paine 1969; 1980; Polis et al. 2000). At the same time, it speaks to us of the eternal cycle of life and death.

As we have seen, the ursine ancestry of the main character, his hybrid nature, is highlighted in these European tales and appears to be grounded in an archaic belief that held that humans descended from bears. This can be compared to the many Native American origin myths that claim bears as ancestors, too. And even if direct descent is not claimed, bears often share family relations through marriage and sexual relations, beliefs frequently exteriorized in narratives and legends. As a result, in these Native American oral traditions bears often appear as both ancestors and kin (Kassabaum/Peles 2020, 111).

The plot of the European tale unfolds in a landscape infused with trophic relations, a metaphysics characterized by an awareness of the intricate reciprocal relations inherent in Nature. The complex food-chain network of predator-prey interactions is emphasized, rather than the triumph of "man over beast". Animals are collaborators and function as active participants, not passive by-standers. Overall, the plot is framed by elements typical of an animist worldview. When compared to Native American spirituality, we find evidence of shape-shifting and can identify what appears to be the European counterpart of a Native American vision quest by means of which the seeker obtains spirit animal helpers and creates a medicine bundle composed of talismans symbolizing each guardian animal (McGaa 1990, 75–83; Woodhead 1992, 60–63, 121–128; Waugh 1996, 56–60; Encyclopaedia Britannica 2015; Posthumus 2018). The plot itself revolves around ritual combats between two shape-shifters, each aided by their respective Animal Helpers (Shepard 1999; 2007; Frank 2016a; 2019).

However, these aspects of the tales did not attract the attention of scholars, probably because researchers were unfamiliar with the tenets of an animist ontology. Instead of pursuing how evidence for the ursine genealogy implicit in these tales might be explained or otherwise documented ethno-

graphically, it has been ignored and treated as a mere curiosity. Indeed, by the end of the 19th century folklorists were busy concentrating their efforts on a very different task, that of classifying the narratives according to motif and tale type (Cosquin 1887, 1–27; Dundes 1997; Frank 2015). By 1910 Panzer had documented 221 European variants of ATU 301, the descent of the Bear's Son hero to the Underworld (Panzer 1910). In a study published in 1959, 57 Hungarian versions of the tale were mentioned (Kiss 1959), and in 1992, Stitt, in his study of *Beowulf and the Bear's Son: Epic Saga, and Fairytale in Northern Germanic Tradition*, recorded 120 variants of the Bear's Son story for Scandinavia alone (Stitt 1992, 25–27, 209–217). The cycle of oral tales is present in all the Indo-European language groups of Europe as well as in Basque and Finno-Ugric languages, i.e. in Finnish, Saami and Magyar (Hungarian), and there is even one example of the tale found among the Mansi (Voguls) of Siberia (Von Sadovszky/Hoppál 1995, 118–120, 152).

In addition to the preoccupation with classification by motif and tale type, what one also observes is that when the tale has been analyzed, that analysis has been geared primarily to finding counterparts to the tale in epic poems and sagas, that is, in literary works (Panzer 1910; Glosecki 1988; 1989; Stitt 1992; Anderson 2016). What has not been explored properly is whether the ursine genealogy intrinsic to the tales was part of larger animist worldview that left traces in the ethnographic and ethnohistoric record, that is, in the real world.

We need to remember that the label frequently used by folklorists, namely "The Bear's Son", is a broad one.[4] It encompasses ATU 301 and all its variants. In addition, this tale type has been linked to ATU 650A "Strong John." A key element in the plotline of ATU 301 is the fact that the protagonist acquires two or three unusually strong and fully anthropomorphic companions who help him. What has not been recognized, however, is that the fully anthropomorphic helpers have replaced the Animal Helpers found in the older variants. This caused the tale of the four animals to end up being relegated to a totally separate and supposedly unrelated tale type, ATU 554, called "The Grateful Animals". And, to complicate matters even more, as will be demonstrated, the Animal Helpers resurface in a tale type referred to as ATU 302, namely "The Ogre's (Devil's) Heart in the Egg".

To summarize, over time the plot of the tale broke into pieces. The variants that resulted were reshaped, adjusting themselves in different ways to reflect the changing cultural norms of Europeans. Hence, we can see that narratives associated with the expression "The Bear's Son" focus on ATU 301 (plus ATU 301A, B, C, and D, variants referred to globally by folklorists as "The Three Princesses"). At the same time there are other tale types that form part of the same narrative tradition: ATU 650A "Strong John", ATU 554 "The Grateful Animals", and ATU 302, now shortened to "Soul in an Egg". Over time the storyline and episodes associated with earlier versions of the tale ended up becoming fragmented and, as a result, became classified as different tale types (ATU 650A, ATU 554, ATU 302, and ATU 301, plus at least four subtypes of ATU 301).

The disappearance of the Animal Helpers

In the tale known as "The Bear's Son" (ATU 301), the Animal Helpers disappear entirely from view, replaced by figures more in consonance with the later worldview. Instead of animal helpers, the hero acquires two or three anthropomorphic companions, huge male figures with extraordinary strength.

4 ATU 301, referred to globally as "The Bear's Son", is the term used to refer particularly to versions of the tales that have been compared to northern sagas, such as *Beowulf*. In other instances, the same set of tales carries a title that highlights the name of the protagonist in that language: *John the Bear* in English, *Juan el Osito* in Spanish, *Jan de l'Os* in Catalan, *Jan l'Ourset* in Gascon, *Jean de l'Ours* in French, *Giovanni l'Orso* in Italian, *Hans Bär* in German, and *Ivanuska* as well as *Ivanko Medvedko* in Slavic languages.

Although the main protagonist is still often portrayed as half-bear and half-human, born of a human female and a bear, his helper companions are no longer animals as is the case in the earlier versions. Although it is not clear exactly at what point in time the human helpers were substituted for the four animals, De Blécourt (2012, 179–181) discusses a literary tale dating from 1634 in which the animals morph into helping brothers-in-law or brothers, a tale type classed as ATU 552.

With the passage of time a kind of bifurcation takes place, giving rise to two types of variants. One type is represented by the set of stories that continue to retain the animal helpers (ATU 302 and ATU 554) and, to a certain extent, imprints from the animist coding typical of the earlier storyline. But in these tales, the ursine identity of the hero is often lost. The other type consists of the set of stories (ATU 301) known as the tales of "The Bear's Son" in which the ursine ancestry of the main character is retained, but the animal helpers have been transformed into human companions.

Not uncommonly, the hero known as the Bear's Son was elevated even further, as elements from a hierarchically organized society were introduced into the frame, a backdrop typical of the genre of literary "magic" or "wonder tales". These became popular and highly influential. They circulated in various print collections published initially in the late 17th century and were followed up by other extensive compilations of tales in the 18th and 19th centuries. These changes allowed the main character to be reconfigured as a hero who descends to the Underworld (often represented as simply a deep hole in the ground) where he rescues a princess (or three princesses). In this instance, each of the princesses gives him a talisman that later on allows him to be recognized as their savior. In the end he is rewarded at court and marries the daughter of the king. Another dominant theme is that of betrayal. The hero is abandoned by his companions who refuse to haul him up out of the hole, an act of betrayal that in the end the hero punishes. Clearly, the backdrop has been transformed and a new interpretive template is now functioning. However, a few key elements from the older storyline still show up.

Factors leading to changes in the text and the fragmentation of its narrative structure

Over time, the cultural schemas supporting the earlier animist ontology lost their hold and were replaced by new ones. This contributed to the loss of awareness on the part of subsequent generations of storytellers and translators of the tale concerning the ursine genealogy, the deeper meaning of the four Animal Helpers and the significance of the shape-shifting that takes place. In the Middle Ages, Christianity contributes to this erosion, bringing about a strict dichotomy, a conceptual divide which attempted to set humans totally apart from animals. And, as this portrayal of animal otherness becomes increasingly entrenched in the worldview utilized by both the tellers of the tale and their audiences, it becomes harder to understand the earlier interpretive framework.

In the eyes of the Church, the European bear cult was perceived as a threat and impediment to the conversion of the popular classes. For example, as Pastoureau notes, the Germanic veneration for the bear shows that the animal was a being apart, an intermediary creature between the animal and human worlds and considered even an ancestor or relative of humans (Pastoureau 2011, 2). During the Middle Ages, worship of the bear, however, was not confined to the Germanic world for it was also deeply engrained among the Slavs, who admired the bear as much as the Germans did. Further proof of this veneration lies in the fact that both Germanic and Slavic languages use *noa* terms – euphemisms – to refer to the animal. This recalls the wide-spread pattern of semantic avoidance documented among the indigenous peoples of North America and Eurasia (Black 1998; Sokolova 2000; Pastoureau 2011; Nagy 2017, 46–52). As is well known, the Germanic as well as the Slavic words for "bear" are not the same as those used in the other Indo-European languages (see Nedoma and Udolph, this

volume; Pokorny 1959, III, 875; Buck 1988; Praneuf 1989). The words for "bear" in other Indo-European languages derive from a common Proto-Indo-European root, namely, **h₂rtkos*.[5] It is logical to assume that the semantic avoidance evidenced in Germanic and Slavic languages was brought about because earlier speakers of these languages were operating from a mindset similar to that of indigenous hunter-gatherer populations who also show deference to bears, often viewing them as kin or ancestors and believing that bears hear everything that is said, especially what is said about them.

Wherever bear ceremonialism is practiced, such patterns of semantic avoidance go hand in hand with the belief that the bear is omniscient and, therefore, has the power to hear all that is said about him. Addressing the bear with its real name is considered dangerous, so hunters avoid mentioning it, choosing rather to speak about the animal using euphemisms. In times past, the common term utilized by speakers of Slavic languages was *medved* "honey-eater", which today is the word used to refer generically to a bear, while Germanic tribes preferred to call him the "brown one", an expression that gave rise eventually to the English word *bear*, linked etymologically to the English words *brown* and *bruin* (cf. Nedoma and Udolph, this volume). Consequently, the Slavic and Germanic words for "bear" can be considered semantic residue left over from this older ursine belief system.

In times past, evidence for the belief in the supernatural powers of the bear, especially its omniscience, was not limited to these parts of Europe. Indeed, throughout much of Europe "in the Carolingian period, the bear continued to be seen as a divine figure, an ancestral god whose worship took on various forms but remained solidly rooted, impeding the conversion of pagan peoples" (Pastoureau 2011, 3). Almost everywhere, from the Pyrenees to the Baltic, "the bear stood as a rival to Christ. The Church thought it appropriate to declare war on the bear, to fight him by all means possible" (Pastoureau 2011, 3).

Whereas the struggle of the medieval Church against the bear was ultimately successful, that is, in terms of eliminating most overt traces of the ancient ursine cults, what it was not able to do was to stop storytellers from passing on tenets of the ursine belief system, albeit covertly, in the form of traditional folktales. These stories insured that the hero's life and times would be transmitted orally, under the radar, across generations even as the storytellers and the members of their audiences were increasingly unaware of the message implicit in the plot itself. With the passage of time, the narratives would be translated from one language to another, a process that would introduce modifications and significant fragmentation of the narrative structure along with an increasing loss of awareness of the underlying animist cosmovision. As noted, one of the significant changes that can be detected in the tales is the bifurcation that took place with respect to the identity of the Animal Helpers. In the older version there are four animals who give the hero the power to shape-shift, a characteristic typical of animist ontologies. In what are more recently anthropocentrically coded versions the hero's helpers are transformed into two or three men endowed with immense strength as is the hero himself.

Kinship affirmation

The ursine genealogy which portrays bears as ancestors and therefore kin is a central tenet of bear ceremonialism. Therefore, it is not surprising to find stories in which a human female mates with or marries a bear in locations where bear ceremonialism was or still is practiced (Deans 1889; Edsman 1956; McClellan 1970; Henderson 2020). The presence of such stories is one of the constants of

5 For discussion of the Basque term for "bear" as well as further discussion of the Indo-European forms, cf. Frank 2017, 93–109.

bear ceremonialism (Rockwell 1991; Shepard/Sanders 1992; Frank 2016b; Wiget 2021). In Europe this trait was accompanied by the belief that viable offspring could result from such a union. Surprising as it might seem, for centuries Europeans continued to believe not only that bears often mated with human females but that a mixed blood offspring could result. Allegedly true stories about a bear abducting a young woman and the two of them living together continued to circulate in the Pyrenean region well into the 19th century.

Just how widespread this belief really was is underlined by the work of William of Auvergne (1228–1249) who was one of the most remarkable intellectuals of the first half of the 13th century. The question of bear-human mating was taken up in one of William of Auvergne's works, *De universe creaturarum.* In that work Auvergne reports an *exemplum notissimum,* i.e. a well-known exemplary story: One day in Saxony, a bear of enormous strength abducted the wife of a knight and imprisoned her in a cave where he usually hibernated. She was a woman of great beauty, so that after a time her body awakened the bear's concupiscence. He raped her, and in his infernal den had sexual relations with her for several years. Three sons were born of this union. Happily, one day a woodsman freed the woman and her sons, she returned to her husband and lodged her sons near the château in the sight of everyone; later, they were even knighted in the presence of the great Saxon barons. They did not differ from other knights except for their abundant hairiness and their habit of inclining their head slightly to the left, in the manner of bears. They were, besides, given the name of their father and were called *Ursini*, sons of the bear (Pastoureau 2011, 77).

Auvergne goes on to argue in favor of the actual existence of these unions: "Unlike mules, the offspring of cross-species mating, children born from a bear and a woman can procreate and have descendants" (Pastoureau 2011, 78). It is in light of these beliefs, namely, that creatures born from the union of a woman and a bear could be fertile and have descendants, that we can understand genealogies that portray a bear as the ancestor of a king. For example, we have the chronicle *Gesta Danorum* from around 1200 by Saxo Grammaticus in which this Danish scholar recounts that the great-grandfather of King Sven II Estridsen of Denmark (1047–1076) was the son of a bear, a dynastic legend that goes back further in time. The story told held that a bear had abducted a young woman and "married" her in his cave where she later gave birth to a son. "In the official genealogies compiled at the Danish court throughout the thirteenth century – the great century of genealogies in Scandinavia – the bear as ancestor of a king held an acknowledged place. No one doubted that a bear was one of the founders of the Danish dynasty […]" (Pastoureau 2011, 79). Rather than damaging the royal name, the animal ancestry seems to have given a mythical prestige to the Danish dynasty. Indeed, it appears to have aroused the envy of the kings of Sweden and Norway, to the point that from 1260 on the kings of Norway also claimed descent from that same founding bear.

As Pastoureau notes, nothing was invented by Saxo Grammaticus himself for as early as the 11th century, literary and narrative texts were circulating that had a bear among the ancestors of various prestigious figures. Among them was Earl Siward of Northumberland, who died in 1055 and whose father was said to have had "bear's ears". That latter feature was considered the remaining bodily inheritance of the bear ancestor that had procreated with a woman (Brunner 2007, 26; Pastoureau 2011, 80). Indeed, in many of the folktales what set the bear's son apart from other children was that he was extraordinarily hairy or that he had "bear's ears".

Finally, with respect to other ways the ursine genealogy manifested itself in social practice, we find evidence that integral to the veneration shown for the slain bear were ritual acts of affirmation of the kinship between humans and bears. The theme of a ritual wedding involving the slain bear is well documented in Finland (see Piludu, this volume). For example, according to a 18th-century account from Viitasaari in central Finland, upon the arrival of the hunters carrying the slain bear, a ritual "wedding" was performed. That ritual repeated many of the customs of ordinary weddings but in this case was celebrated between the bear and one of the girls of the village. In this way, the

kinship bond between bear and humans was symbolically renewed (Sarmela 2006, 2–3, 16).[6] And, once again, a feigned wedding or coupling of a human and the slain bear finds its counterpart in other locations where bear ceremonialism has been documented.

The larger picture emerges when different threads of the overarching animist belief system are woven together. At first, they might appear to be random, unrelated ethnographic bits and pieces. But when examined using the interpretive frame of bear ceremonialism and its associated ursine genealogy, they take on new importance. For instance, we have certain scenic elements that are an integral part of the performances known as *fêtes de l'ours,* celebrated each year in the village of Arles-sur-Tech in the Pyrenean region (Fig. 2; see Bakels/Boer, this volume). The scenes represented could have been viewed as reenactments of the initial encounter of the young woman with the bear and their subsequent mating as narrated in the folktales. This interpretation is quite possible since this zone is one where in times past the events portrayed in the tale of "Jean l'Ours" would have been familiar to everyone in attendance.

The scene in question has a young woman called Rosetta – actually a man dressed as a woman – being grabbed by the Bear who attempts to drag her into his den which has been constructed in the middle of the plaza. The Bear also goes after one or more women in attendance and brings them into his lair, a practice first described nearly a hundred years ago by an eyewitness, the British folklorist Violet Alford (Alford 1930, 173–174). The feigned sexual coupling of the Bear with Rosetta as well as with actual women in the audience is commonplace still today in these annual performances.

Concluding commentary

To summarize, the stories classified collectively as "The Bear's Son" represent one of the most widespread motifs found in European folklore. Although the narrative has been analyzed from many angles, it is only recently that the larger implications of this set of tales have been taken into consideration, especially the way that they resonate with the tenets and practices of bear ceremonialism. This rethinking has allowed the importance of the stories to be better appreciated. When projected against a backdrop that was once informed by the belief that humans descended from bears, the narratives become a key to understanding how a central tenet of this much earlier animist cosmology came to be transmitted across time, albeit with modifications.

That humans descended from bears meant that human animals could be viewed as having a mixed ancestry. And that genealogy is one that can be traced back to the intermediary figure represented by the half-bear, half-human main character of these folktales. However, evidence for the belief in that genealogy is not limited to the storyline of these tales. Rather there is ample reason to believe that the ursine ancestry of humans also left an indelible imprint in the ethnographic record and even in language. Even though the belief that humans descended from bears was already falling out of favor during the Middle Ages, the conviction that humans and bears could mate and produce fertile offspring was accepted as factual in much of Europe throughout the Middle Ages and beyond (Pastoureau 2011, 68–85). Indeed, it is not unusual to find folk heroes and even actual kings tracing their own lineage back to such a bear-human mating (Glosecki 1988; 1989). Hence, until that older cosmology faded completely from view, the Bear's Son Tale along with its variants was probably interpreted by audiences in a very different and far more realistic fashion than it is today.

6 For further discussion of the ritual wedding, cf. Pentikäinen 2007, 63–76.

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Fig. 1. The seven provinces of Euskal Herria, the historical Basque Country, span France (light yellow) and Spain (rest of the map). Names in this map are in Basque (map GIS department, ZBSA, after http://en.wikipedia.org/wiki/Basque_Country_(historical_territory)).

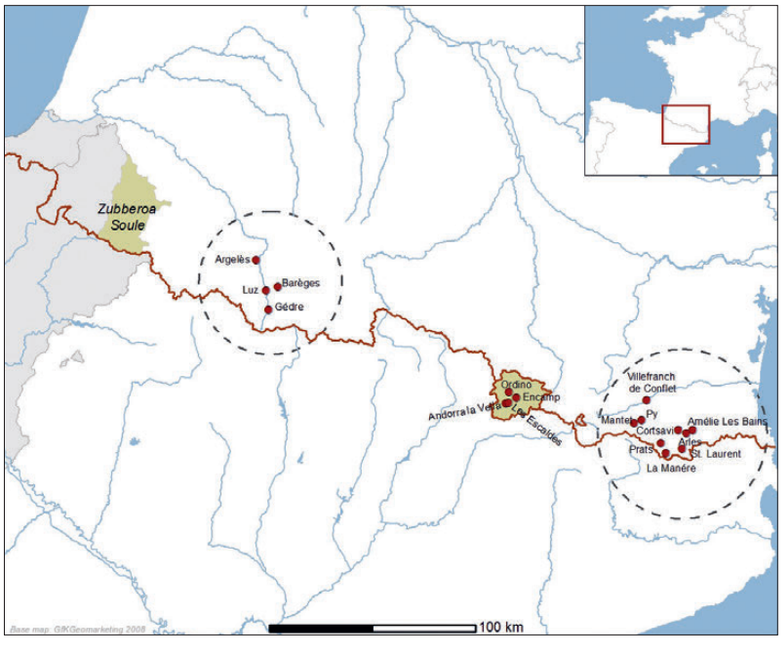


Fig. 2. Pyrenean Fêtes de l'Ours *(map GIS department, ZBSA, after* Gastou *1987, 20).*

Table 1. The predator-prey pattern in the Bear's Son Tale.

Predator	**Prey**
Lion	Porcupine
Dog	Hare
Eagle	Pigeon
[Pigeon Egg]	Snake

The bear in European folktales – with a special focus on Scandinavian variants

By Angelika Hirsch

Keywords: Son of a bear, animal bridegroom, bear-skin, Grimmelshausen, berserker

Abstract: Bears can be minor characters in European folktales as well as main ones. In animal tales they are always characterised as simple-minded. In other types of folktales they can be opponents as well as helpers. In regions where the coexistence of humans and bears is commonplace, bears appear more often in functions that are occupied by other animals in similar European versions of the type. The bear is a main character in the folktale type The Three Stolen Princesses (*ATU 301*), The Animal as Bridegroom / Beauty and the Beast (*ATU 425A and C*) *and* Bear-Skin (*ATU 361*). *For the latter, however, the findings are disillusioning – traces of the berserker for example can hardly be found in Scandinavian folktales.*

State of research

The time of monographs and substantial fairy tale related publications on the bear lies decades back. Friedrich Panzer's work "Das Märchen vom Bärensohn" was published in 1910 (Panzer 1910, 3–245) and Nai-tung Ting's study on the type AT 301[1] in 1970 (Ting 1970), as a supplement to Panzer's study. The historian of religion Carl-Martin Edsman presented another work on the subject in 1956 (Edsman 1956).

The lemmas for *Bärenführer* (bear trainer) and *Bärenhäuter* (bear-skin) in the *Enzyklopädie des Märchens* (1999) were written by the fairy tale researcher Heinz Rölleke, and for *Bärensohn* (son of a bear) by the American folklorist Donald Ward. Hans-Joachim Paproth, an ethnologist, wrote the introductory article *Bär* (bear) in the mentioned *Enzyklopädie* (Paproth 1999). He had been closely associated with Scandinavia since his youth, studied in Sweden and submitted his PhD thesis on the bear ceremony among the Tungusic peoples (Paproth 1976).

This seems worth mentioning to me as the interest in bear motifs is greater among anthropologists, ethnologists, and religious studies scholars than among the folktale research community. This is not due to a lack of interest but due to the relevance of the subject. The fairy tale takes its motifs from everywhere, from the mundane environment, from legends, mythology, and popular beliefs. It fuses them into something entirely new. For one thing many magical, enchanting, cultic elements can be found, but they "vanish" in the wonder tale. Everything happens as if by itself; rituals, ceremonies

1 AT = type index after Aarne/Thompson, see also text below.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1121–1132 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134381

and the like are not necessary. The otherworld is just as natural as the real world, the hero does not know any numinous wondering (Lüthi 2005, 8–12, 63–75). Drawing conclusions from folktales about individual elements in cultures and their evolutionary processes remains rather a marginal subject of folktale research.[2]

The fierce dispute in the 1990s over the archaic character of bear cults has led to a certain reluctance in dealing with the bear as a research subject in many disciplines (see contributions by Rydving and Sundqvist, this volume).

In recent years the narrative researcher Hans-Jörg Uther has made a significant contribution to an indispensable tool for the research of folktales with his thorough revision of the type index by A. Aarne and S. Thompson (AT), which has therefore been called the Aarne-Thompson-Uther Index (ATU) since 2004 (Uther 2004). In 2015 the *Enzyklopädie des Märchens* (founded by Kurt Ranke, edited by Rolf Wilhelm Brednich et al.) was completed, a monumental work consisting of 15 volumes, which provides detailed information on all questions of narrative and folktale research and will be referred to here several times.

Without a doubt, it is impossible to imagine the European folktales without the bear motif. When it comes to systematising the individual topoi, however, it quickly becomes confusing. Since only a general overview can be given in the context of this anthology, I will do just that: In a first part I will give a general overview of the less interesting types of folktales. The second part will deal with those types in which the bear plays – or can play – a major part.

The bear as a minor character

Animal tales

The animal tales (ATU 1–99) tell about the relationship between animals in countless versions across the continent. Usually they are short, often related to animal fables and they tend to be aetiological. Typical beginnings of these stories are "The bear, the pig and the fox once made a covenant together" (Serbia: Karadžić 1854, 261) or "In the old days, when the animals could still speak, the bear and the fox were very good friends, and they sowed, reaped, threshed and ate together (Lapland in Sweden: Poestion 1886, 15–18) or "Once in summertime the bear and the wolf were walking in the forest, when the bear heard such beautiful singing from a bird, and said: 'Brother wolf, what kind of bird is it, that sings so beautifully?'" (Germany: *Der Zaunkönig und der Bär [The Wren and the Bear]*; Grimms' Kinder- und Hausmärchen [KHM] 102; cf. Grimm 1857, 87). Reliably they end with the bear being outwitted. Even though it is feared for his size and strength, it is never the brightest one. The storytellers of these popular tales agree on this throughout Europe. As popular as the bear is in this type of folktale, it is also interchangeable. The punch line usually works with another animal, too. Hardly anything specific is said about the bear as an animal in these tales.

The bear as an interchangeable element

The bear is used again and again in folktales throughout Europe when a dangerous animal is needed – e.g. by a master to get rid of a troublesome farm hand (Bukovina: *Vom Zigeuner und dem Bären [About the Gypsy and the Bear]*; cf. Waldburg 1853, 358–362). This usually ends well for the clever farm hand but fatally for the bear. Variants of "The Wolf and the Seven Young Kids" work just as well with the bear instead of the wolf (Saxony/Transylvania: *Der Wolf und die sieben jungen Geißlein [The Wolf and the Seven Young Kids]*; cf. Haltrich 1882, 82–83).

2 Having studied the history of religion myself, however, I personally think it is extremely worthwhile.

However, the bear is also often used in a positive function, e.g. in folktales of the type ATU 552 *The Girls Who Married Animals*: Three sisters have each been given to an animal as wives, their brother goes in search of them, wins himself a wife with the help of his brothers-in-law (bear, eagle, fish), and in the end he redeems his enchanted brothers-in-law (*Die Wunschdose [The Wish Box]*, a Danish fairy tale; cf. Grundtvig 1879, 44–46).

In type ATU 567 *The Magic Bird-Heart* bears also appear frequently in tales across Europe among the animals that the heroes gain as companions and helpers (*Wattuman und Wattusin [Wattuman and Wattusin]* from Sweden; cf. Hyltén-Cavallius/Stephens 1848, 94–123). The animals' help is specific: Bears give hairs from their fur as magic gifts for the journey, fishes a scale, birds a feather. But the animals in all these types remain interchangeable elements and can be replaced by another type of animal without changing anything in the meaning of the narrative.

The bear as an ecotype

The variation of the so-called interchangeable elements is very common in folktales. The material is so condensed and general that it can be adapted to one's own culture and environment with only small changes without losing the core of the plot. Bigger changes are also possible – thus interesting ecotypes[3] can arise such as within the type ATU 156, which, according to the ancient source, is titled *Androcles and the Lion* (Hirsch 2020). With great delight in spinning the yarn it tells of a runaway slave who encounters a lion in the wasteland and, despite his initial fright, pulls a thorn out of the lion's paw, thus winning its friendship and even love. From then on, the lion takes care of him by hunting for him. At some point the slave returns to the people, is captured and sentenced to fight wild animals in the circus. The lion he is to fight does not show itself to be a wild beast but lies down in awe of the slave. So in the meantime the lion had also become a captive. When the audience understands this, all are moved and delighted. Slave and lion are given their freedom and walk the streets in harmony; everybody can admire this unusual friendship.

A particularly condensed and archaic version, in which a bear appears instead of a lion, was recorded by Y. Wichmann among the Volga Chermisses (after Wichmann 1931, 158–159):

The Bear

A Chermissian woman was bringing noodle soup for lunch to the harvest field, and [there] a bear came towards her. It stretches out his paw and comes growling at the woman. The woman looks at the bear's paw: a large branch has gone into it. The woman pulls out the branch, and the bear is delighted, it takes the woman's soup bucket, pours out the soup, but goes into the forest with the soup bucket. The woman remains were she is in amazement. Some time passes and the bear returns: it has filled the bucket [with honey] and brings and gives the honey to the woman.

The setting of this tale is not the urban ancient world, it is the rural world of a people on the Volga. The aspect of a lifelong friendship between human and animal is missing.[4]

Just as in the ancient version outlined above the lion remains a lion – there is no magic involved, everything could actually have happened that way – the bear is and remains a bear. It says "thank you" with a generous but typical bear gift. Mutual respect is implied. It seems unlikely to me that Wichmann's text is to be read as a condensed Chermissian derivative of the ancient one. Rather, we encounter here the core of type ATU 156 which wandered through Europe and the Near East long before the famous and elaborate story of Androcles and the lion arose.

3 Special versions of folktales in ethnic groups or specific regions.

4 Nevertheless, I assign this folktale (and the next one) to type ATU 156, because there is no more suitable place in the type catalogue. Besides, this type is often closer to legends than to fairy tales.

A similarly impressive, very specific and singular piece, without classification in the ATU index, comes from Iceland: *Der Mann von Grimsö und der Bär* (*The man from Grimsö and the Bear;* Rauch [no year], 76–77). On Grimsö the fire has gone out, three men walk across the frozen sound to the mainland to get fire. On the way, one of them does not dare to jump over an open spot, turns back and gets into great trouble in the changing weather. On an iceberg he encounters a female polar bear lying on her cubs. She indicates that he should lie down with her cubs, warms and nurses him and finally brings him back home. The man slaughters his best ram for the bear and her cubs. Meanwhile, the other two messengers return on a ship with fire.

The aspect of the lifelong friendship is missing here, too. Instead we have the image of a female polar bear suckling a human. The relationship between human and animal cannot be told more intimately. Here, too, the bear is and remains an animal and helps in a way that suits its capabilities, does it not? Could it not be that …? This question arises inevitably.

The bear trainer and his bear

The type ATU 1161, *The Bear Trainer and His Bear,* is known across Europe and popular because of its easiness (Uther 2015, 291). A fiend is outwitted by a bear trainer more or less by chance. A famous Norwegian example is *Die Katze auf Dovre (The Cat on Dovre)*: Halvor's house is regularly invaded by ravenous trolls on Christmas Eve. The bear trainer who happens to pass by stays for the night, a troll child discovers the white bear, mistakes it for a cat, burns its nose wantonly, whereupon the white bear puts all the trolls to flight. The following year, the trolls ask Halvor beforehand if the *cat* is back again. Halvor answers in the affirmative and adds that she now has seven young ones – and he is rid of the trolls forever.

The bear as a main character

Son of a bear and bear as bridegroom

In two of the most well-known types of wonder tales ever the bear plays a prominent role: ATU 301, *The Three Stolen Princesses*, and ATU 425A, *The Animal As Bridegroom* / ATU 425C, *Beauty and the Beast* (see Frank, this volume).

Both types of folktales are known throughout the Northern hemisphere and are represented with countless versions. And both tend to combine different episodes, which means that there are obvious differences in the length of these tales. Nevertheless the narrative cores of the stories are stable and the added episodes are by no means arbitrary but are either likewise common European folktale types or widespread ecotypes.

In 1910 F. Panzer published the only essential monograph (and, as far as I know, the only existing one) on ATU 301 (at that time still AaTh 301; Panzer 1910, 3–245). In *Das Märchen vom Bärensohn* (Bear's son tale) he realises a detailed study of more than 200 versions of the folktale. These are by far not all existing texts. And although the hero is actually a bear's son in less than a quarter of the versions examined, Panzer considers this "most widespread and probably also most original" (ibid., 16: "verbreitetste und wohl auch ursprünglichste") representation to be the leading version – and consequently gives it the title *Son of a Bear*. The supernatural origin of the hero shines through in all versions. This applies not only to ATU 301 but also to ATU 650, *Strong John*, which is now listed as a separate type. The semi-animal origin of the hero gives a plausible explanation for his enormous strength (Hirsch 2021).

The core of ATU 301 variants is as follows: A woman lives more or less willingly with a bear and has a son. When the son grows up, he leaves the bear's den for the human world. This step can be accompanied by patricide or an escape, sometimes the father even prepares the son for the human world. In any case

there are considerable problems with the young man's animal strength. Often it is told with relish how the hero loads whole trees onto his back, sinks anvils into the earth with one blow, and so on. Finally he goes out into the world, often gaining two companions on the way who also have special talents. In any event, the hero hears of stolen princesses, imprisoned in a cave by a dragon or another monster. The men find the cave, but only the hero dares to go down, frees the king's daughters, has them pulled up by his comrades, and is himself abandoned by both of them and remains at the bottom. He finds helpers who carry him up, arrives at the royal court, is recognised and honoured as the real liberator.

The versions of ATU 425 are even better known to the general public (Disney has its share in this): *Beauty and the Beast* has even made it into the type designations. It is about an animal bridegroom – worldwide, marriage between human and animal is an extremely common motif (Findeisen 1956; Röhrich 1973). Apuleius ennobled the tale of *Cupid and Psyche* literarily in his *Metamorphoses* but certainly had recourse to an existing narrative (Hirsch 2006, 171). The plot of this story is as follows: A father must promise his youngest daughter to a threatening animal, because he has unwittingly violated a taboo that usually appears to be trivial. The animal picks up the girl, brings her to his castle and takes on human form at night. After some time the girl visits her parents (often three times), and is persuaded to take a look at the mysterious bridegroom. The girl lights a candle and, moved by the man's beauty, lets a drop of wax fall on him; he then wakes up and disappears. In some versions it is only a ray of sunshine that strikes him through a tiny crack in the door. In the full versions, the heroine now undertakes a painful quest until she finally delivers her husband from the clutches of a female demon. In the short versions the quest is missing; in them, either the ray of light or the burning/beating down of the animal skin becomes the moment of redemption.

Although a completely different story is told here than in ATU 301, both types have in common that a human woman and a bear (or another animal) live together as husband and wife more or less amicably for a shorter or longer period. Both tales also have in common that it is always a large and impressive animal. In the course of the ecotypical adaptions, the son of a bear may be the son of a mare as well (Panzer 1910, 16–29; this is more common in southern Europe and the Near East) and the animal bridegroom a lion or a wolf, for example (Kawan 2008, col. 556).

It is irrelevant whether the relationship between woman and bear is based on unfortunate circumstances (poverty, escape), coercion (bear abducts woman/holds her captive) or love – there is no doubt about the possibility of a marriage between human woman and bear man. However, it is interpreted differently: In the folktale of the *Son of a Bear*, father bear remains an animal. Edsmann (1956) concludes, especially for the Nordic countries, that the bear's son motif is connected to the bear cult, i.e. a deep connection between human and bear. Folktales reflect this connection in their usual matter of course style. By the way, there are not only sons of a bear but daughters of a bear as well! In an archaic East Yak folktale, for example, a woman is reborn first as a flower, then as a bear's daughter, until she finally stands in the sky as a great bear with her two cubs as a constellation.[5]

In the variants of ATU 425, however, the animal bridegroom is an enchanted human being – i.e. marriages between humans and animals are not classified as normal (anymore). They are based on a misfortune, an enchantment that is resolved as the plot progresses. The famous Norwegian variants *East of the Sun and West of the Moon* and *White-Bear-King Valemon* are great examples for the full form of this type (Asbjornsen/Moe 2003, vol. 1, 160–169; vol. 2, 196–204). It becomes evident very quickly that the bear is an enchanted human being, the animal form can be discarded at night. Here, no animal is mating with a human. It just appears to the outside world like this for a while. As the tale progresses the bride's quest and her efforts to break the spell of a female troll are told in detail.

5 *Die Mosfrau (The Mos-Woman)*, cf. Gulya 1968, 26–36. Another daughter of a bear can be found in the strange Bosnian variant of ATU 310 *Die Bärenprinzessin (The Bear Princess),* cf. Preindlsberger-Mrazovic 1905, 81–94.

The Swedish version *Das Mädchen und der Bär* (*The Girl and the Bear*), however, works without the quest of the heroine. But she does not know anything about the enchantment. She actually believes for a long time that she has to marry a bear. Only when she has fallen in love with the animal and is ready to marry a bear, is it revealed that he is an enchanted human being (Liungmann 1965, 76–80). In this story the possibility of a marriage between a human and an animal does not yet seem too far away.

Bear-skin

The type ATU 361, *Bear-Skin*, should also be given greater attention as it raises the question about a connection to the berserker. In fairy tale research it is assumed that this type is mainly distributed across northern, northeastern, central and eastern Europe (Röth 1998, 51: "wohl vor allem in Nord-, Nordost, Mittel- und Osteuropa").

This is the content of the Grimms' fairy tale: A war has ended, a king sends a loyal soldier away without pay. He must starve because he has learned nothing but war. The devil offers him a deal: For seven years no washing, no combing, no clipping of hair and nails, no saying of the Lord's Prayer, wearing a bear-skin and sleeping on it, but in return his pocket will be full of gold at all times. If he keeps it up, he will be free after seven years, otherwise his soul will fall to the devil. After one year he looks terrible, people avoid him. Once he helps a man out of financial need who promises him one of his daughters in return. The eldest two refuse and mock him, the youngest believes that under the repulsive exterior there is a good man and becomes engaged to him. He continues to wander the world until the seven years are up. In the end, the devil has to wash him, cut his hair and nails, and he returns to his bride's house as a distinguished man. No one recognises him until he reveals himself. The older sisters commit suicide out of envy – the devil thus gets even two souls …

The eponymous Grimms' Kinder- und Hausmärchen (KHM) 101 was called *Der Teufel Grünrock* (*The Devil Greencoat)* until the 5th edition of the KHM in 1843 and is very close to KHM 100 *Des Teufels rußiger Bruder* (*The Devil's Sooty Brother;* a crude humorous version) and also to the later version of KHM 101 *Bear-Skin*. Wilhelm Grimm added the bear-skin motif in particular. This change is not arbitrary. For this type has a significant version in a story that was published almost 200 years earlier by Hans Jacob Christoffel von Grimmelshausen under the title *Der erste Bärnhäuter* (*The first bear-skin*) in 1670. This story is similar to the Grimms' version, not only in its content and structure, but also in its wording. Grimmelhausen's text is not only valuable as a clearly older record of the story, but also because of Grimmelshausen himself. Not only is he still considered one of the most important early German writers, but as a pressed soldier he experienced the horrors of the Thirty Years' War first-hand. Grimmelshausen thus is no bookman; when he talks about being a soldier, he knows what he is doing:

On the origin of the name Bärnhäuter

Those who want to find out the origin of the German disgraceful name Bernheuter per ethymologiam have assumed that in ancient times, when the old Germans still slept on all kinds of skins, those were called by this name in mockery who remained lying on their Bärnhaut out of laziness and never wanted to do anything brave. It may be that I do not remember so far out that I could give news of it; but an ancient painting has been found at Hohen-Roht Castle, from which the enclosed portrait has also been copied, with the following account of where this name originated (translation by S. Lutkat, after Tittmann 1877, 247).

However, the image actually printed by Grimmelshausen does not correspond to his description, of all things the bear skin is missing. He chose the following verse for the image:

So I looked, I first bear-skin
The name I got from the bear's skin
That I shot, that I do not even dread
Whether at that time I was the object of much envy.
As high as my fame had risen before,
So low must it now lie in the highest disgrace.
You can see from this : what is highly esteemed today,
That envy will overthrow in all too short a time (translation S. Lutkat, after Tittmann 1877, 246).

Grimmelshausen's intention is to correct the meaning of the proverb *Auf der faulen (Bären)Haut liegen* (meaning "to laze about" – a literal translation would be "to lay on the lazy [bear] skin") – and to tell the true background story of the bear-skin, which he sets in 1396 (i.e. about 250 years earlier) because of the "ancient painting" and reproduces it in the following – with great similarities to our bear-skin fairy tale.

Even in his time "bear-skin" is a term of abuse – an interpretation that can also be found, for example, in the Grimm's fairy tale *Die Goldkinder* (*The Golden Children*; KHM 85): "Let him go, he is a bear-skin and as poor and bald as a church mouse, what are we to do with him!"

There are many motifs and narrative topoi that are virtually immortal and appear in ever new contexts and variants. The son of a bear, the human being transformed into a bear and the bear-skin are among them in the Northern hemisphere. The reinterpretation of the brave bear-skin hero as a lazybones and an outlaw, under whose fur (e.g. in KHM 85), however, there may be a true king, is obviously the logical consequence of a gradual process of degradation and profanation: real bear – enchanted bear – disguised bear, or respected/venerated animal – animal transformation as misfortune – animal form as an image of a despised person.

Such reinterpretations are not the result of sheer arbitrariness, probably not even conscious processes; they are connected with the changing of thought patterns and values. If one takes a closer look and examines many versions of one type of folktales, however, lines of descent can be discovered. That is why it seems logical to bring up another interpretation of the bear-skin – the berserker, the warrior in a bear's skin. "His men went without mail shirts, and they were fierce, and they were fierce as dogs or wolves. They bit their shields and were strong as bears or bulls. They slew the people and neither fire nor steel could harm them. This was called 'Walk of the Berserker'"(Peukert 1988, 88, here in English translation; see also Sundqvist, this volume). This is how Snorri writes in Heimskringla, about 400 years before Grimmelshausen and about 150 years before the time in which Grimmelshausen sets the story. In Scandinavia there are repeated reports of men who are both human and bear. Many names testify to that: Hallbjörn – Bear of the Hall, Bödvar Bjarki – Little Bear, Björn – Bear. Even if some aspects of the classification of the berserker are disputed and their interpretation, as here by Snorri, is sometimes rather positive or, as by Saxo Grammaticus, clearly negative (Hube 2004, 295–296), these warriors in bear's clothing are a component of northern European myths and heroic epics. Astonishingly, Snorri mentions not only bears but also dogs, wolves and bulls which increases the general confusion about his famous quote. It seems that not the bear is his actual focus but the most threatening and bloodthirsty animal possible.

The proximity, assimilation or even transformation of a fighter into an animal is probably an elementary idea, i.e. an idea that has developed independently all around the world. Animal masks, amulets, or animal names, the designation of age groups of fighters according to animals such as wolves or bears as well as the attribution of other animalistic traits are encountered around the globe (Becker 2008, col. 541–543; see different contributions, this volume).

Back to the Brothers Grimm: It is particularly striking that the soldier in the fairy tale only becomes a berserker – a bear skin bearer – when he is no longer a soldier. Berserker and soldier go

together without much thought. But in the connection of berserker/no-longer-soldier the interpretation of the bear-skin image is shifted once again. Does that make sense? I think so. The soldier – so the tale goes – becomes an animal not in battle, but in peace. What he really did on the battlefield, or what outsiders ascribed to him, becomes visible only now in a repulsive way. And no one wants to have anything to do with it after the war. In short: The repulsive dirty bear-beast of a soldier and the ideal, clean world do not come together. Grimmelshausen (and then the Brothers Grimm in their adaption) tell a highly political fairy tale.

So what about the Scandinavian variants? They do not exist – at least not with the decisive name-giving element, the bear skin. Vladimir Propp, for example, writes about this type of folktale under the heading: *The Unwashed* (Propp 1987, 164–167; see also Röth 1998, 50–51). This part of the devil's pact is, of course, a fixed component in all versions, in order to grasp the meaning of the story, this element is quite sufficient. The bear skin is expendable.

Last but not least I would like to mention one Norwegian folktale in this context: *The Blue Belt*, ATU 590, *The Faithless Mother*.[6] It is a long tale with many episodes: A boy is on a begging trip with his mother. On the way back he sees a blue belt lying on the road, and his mother forbids him to pick it up. Secretly, he does so anyway and thereby gains unconquerable strength. His mother turns out to be the partner of an evil troll; the two try to trick the boy into giving up the belt. In the course of this lengthy episode, the hero wins the help of the 12 lions who were supposed to be his undoing and frees a princess from the grip of a troll. Only now does his unfaithful mother succeed in robbing him of the blue belt and thus of his strength. He is abandoned at sea, the lions follow him faithfully. He succeeds in regaining the blue belt. But now he has to go to Arabia, where his princess is with her father. I quote the passage that matters (after Webbe Dasent 1859):

Now as the lad went along he met a man who had white bear skins for sale, so he bought one of the hides and put it on; and one of the captains was to take an iron chain and lead him about, and so he went into the town and began to play pranks. At last the news came to the king's ears, that there never had been such fun in the town before, for here was a white bear that danced and cut capers just as it was bid. So a messenger came to say the bear must come to the castle at once, for the king wanted to see its tricks. So when it got to the castle every one was afraid, for such a beast they had never seen before; but the captain said there was no danger unless they laughed at it. They mustn't do that, else it would tear them to pieces. When the king heard that, he warned all the court not to laugh. But while the fun was going on, in came one of the king's maids, and began to laugh and make game of the bear, and the bear flew at her and tore her, so that there was scarce a rag of her left. Then all the court began to bewail, and the captain most of all.

"Stuff and nonsense,"said the king; "she's only a maid, besides, it's more my affairs than yours."

When the show was over, it was late at night. "It's no good your going away, when it's so late," said the king. "The bear had best sleep here."

"Perhaps it might sleep in the ingle by the kitchen fire," said the captain.

"Nay," said the king, "it shall sleep up here, and it shall have pillows and cushions to sleep on." So a whole heap of pillows and cushions were brought, and the captain had a bed in a side-room.

6 Stroebe 1922, 263–277. Dr. Klara Stroebe has translated and edited two volumes *Nordische Volksmärchen* (Nordic Folktales) in the series *Die Märchen der Weltliteratur* (The Folktales of the World). Unfortunately, little is known about her. In the epilogue of the edition published in 1967 under the title *Norwegische Märchen* (Norwegian Folktales), revised by Reidar Th. Christiansen, it is stated: „Sie war offenbar mit der norwegischen Sprache eng vertraut, fand auch für eigentümliche, speziell norwegische Begriffe einen treffenden deutschen Ausdruck, und sie verstand es, den Ton und die Eigenart norwegischer Erzähler im deutschen anschaulich wiederzugeben." (She was obviously intimately familiar with the Norwegian language, found an apt German expression even for peculiar specific Norwegian words and knew how to vividly reproduce in German the tone and idiosyncrasy of Norwegian storytellers.)

But at midnight the king came with a lamp in his hand, and a big bunch of keys, and carried off the white bear. He passed along gallery after gallery, through doors and rooms, up-stairs and down-stairs, till at last he came to a pier which ran out into the sea. Then the king began to pull and haul at posts and pins, this one up and that one down, till at last a little house floated up to the water's edge. There he kept his daughter, for she was so dear to him that he had hid her, so that no one could find her out. He left the white bear outside while he went in and told her how it had danced and played its pranks. She said she was afraid, and dared not look at it; but he talked her over, saying there was no danger, if she only wouldn't laugh. So they brought the bear in, and locked the door, and it danced and played its tricks; but just when the fun was at its height, the Princess's maid began to laugh. Then the lad flew at her and tore her to bits, and the Princess began to cry and sob.

"Stuff and nonsense," cried the king; "all this fuss about a maid! I'll get you just as good a one again. But now I think the bear had best stay here till morning, for I don't care to have to go and lead it along all those galleries and stairs at this time of night."

"Well!" said the Princess, "if it sleeps here, I'm sure I won't."

But just then the bear curled himself up and lay down by the stove; and it was settled at last that the Princess should sleep there, too, with a light burning. But as soon as the king was well gone, the white bear came and begged her to undo his collar. The Princess was so scared she almost swooned away; but she felt about till she found the collar, and she had scarce undone it before the bear pulled his head off. Then she knew him again, and was so glad there was no end to her joy, and she wanted to tell her father at once that her deliverer had come.

This is a surprising turn in the course of the fairy tale, but one that is presented in a tone of the greatest matter-of-fact. The hero voluntarily becomes a bear-skin for a (short) time. It remains strangely unclear how far the transformation goes. The way the tearing of the maids is told sounds more like a real bear than acting "as if".

In this fairy tale we come reasonably close to the mystery of the warlike bear transformation. And so we would have found a berserker in a fairy tale after all.

Link collection to examples of fairy tale variants (in German)

Animal tales
Die Geiß mit ihren zehn Zicklein und der Bär / The Goat with her ten Kids and the Bear (Transylvania):
https://t1p.de/xw29t

Die Katze, der Fuchs, der Wolf und der Bär / The Cat, the Fox, the Wolf and the Bear (Zyrian folk poetry):
https://t1p.de/r4xaf

Der Fuchs und der Bär / The Fox and the Bear (Lapland, aetiological):
https://t1p.de/uoby0

The Bear Trainer and his Bear ATU 1161
Vom Zigeuner und dem Bären / About the Gipsy and the Bear (Bukovina):
https://t1p.de/7tbej

Das Kätzchen auf Dovre / The little cat on Dovre (Norway):
https://t1p.de/r3na9

Bear as animal helper
Von den drei Brüdern und ihren Tieren / About the three brothers and their animals (Lithuania):
https://t1p.de/1kcg9

Son of a Bear ATU 301
Bärensohn / Son of a Bear (beautiful Serbian variant, ending in a tall tale à la Münchhausen):
https://t1p.de/0y2ia

Der Bärensohn / The Son of a Bear (Pomerania):
https://t1p.de/fgy7n

Beauty and the Beast ATU 425
Der Bärenprinz / The Bear Prince (short version from Switzerland):
https://t1p.de/dwh1x

Der Bär / The Bear (short version from Austria):
https://t1p.de/s5yca

Der Bär und das Mädchen / The Bear and the Girl (Zyrian folk poetry; short and interesting; the girl frees herself alone from the evil bear):
https://t1p.de/f86wg

Zar Bär / Tsar Bear (very interesting variant from Russia, the bear is on the one hand the monster, but is on the other hand treated very respectfully and shown to be friendly to the children):
https://t1p.de/h8ysv

Östlich von der Sonne und westlich vom Mond / East of the Sun and West of the Moon (Norway):
https://t1p.de/mcl9e

Bear-Skin ATU 361
Der Ungewaschene / The Unwashed (Russia):
https://t1p.de/8u6be

Der Bärenhäuter / Bear-Skin (Germany, Grimm, on Wikisource you can also read all Grimm versions from 1812 onwards):
https://t1p.de/lsyuf

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The role of the bear in the Russian folk tale: Personage, plot type, and behavioural scenarios

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Keywords: Russian folklore, bear character, fairy tales, genre conventions, behavioural scenarios

Abstract: Taking four genres as examples, this paper tracks the realisation of the bear image in the system of Russian folk tale characters. The bear as a tale character is portrayed through a set of capacities defined by the genre convention of the Russian folk tale and the communicative aims of the narrators. So, the bear character is composed of a vast range of conventions. It seems evident that the folk tale as an oral activity and as a special interaction of the narrator with the audience is a presentation of methods of acting in various life circumstances and the very means of influencing the listeners. Different folk tale genres demonstrate the various scenarios of such actions. Forty-six plots with a bear as a character (with multiple records in Russian) have been categorised into plot types. All plots were reviewed from the point of view of the role performed by the bear in each genre.

The characters of the Russian folk tale form a "pantheon" in which the same animals and human beings dwell in different plots. According to the frequency of word usage as recorded in the general glossary of the Comparative Index of Plots of East-Slavic Folk Tales (referred to as CIP hereafter), this pantheon embraces the bear, the fox, the rooster, the cat and the wolf, together with the *muzhik* (the Russian peasant) and the *baba* (the Russian peasant woman), along with the *tsar* and his daughter *tsarevna* (the bride), the soldier, the *barin* (landlord) and the fool (cf. CIP). The multiple reference frequency of these actors in folk tales makes the task of their general characterisation rather complicated. The point is that in various folk tale genres, and even in the tales performed by one narrator, the characters appear in various incarnations depending on the situation – as a trickster or the victim of tricksters, as a protagonist and as an antagonist and donor.

In my article, I would like to set the objective of describing the bear as a tale character through a set of capacities defined by the genre convention of the Russian folk tale and the communicative aims of the narrators. Such an approach represents each folk tale genre as a selection of poetic modes and communicative capabilities, which each narrator has learned and is accustomed to using in his/her way.

First of all, the telling of folk tales is still one of the most common and straightforward folklore performances in Russian cultural practice. Tales are typical bedtime reading for children by their parents, tale plots are staged as plays by both professional and amateur companies, and they are shot as feature and animation films. But most important is the fact that folk tales are still being orally narrated. For many years, during our field studies in the villages of the Russian North (mainly in the Vologda and Arkhangelsk regions) as well as in the northwestern Russian cities and towns, we

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1133–1146 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134382

have been recording oral folk tales and traditional anecdotes of a similar nature told by children and adults with different life experiences (education, career, family status). By storing the audio and video recordings of multiple folk tale versions as produced by our informants, we are trying to find out who was performing folk tales and when and to whom they were (or are) being performed.

I believe that tale narration remains the current symbolic practice in modern Russia, not because it relates to the storage and transfer of "worthy" archaic knowledge from one generation to another, but because I think that through the performance of folk tale plots the narrators (both male and female) continue to solve their actual communication problems. Learning narrative skills goes hand in hand with mastering a range of behavioural tactics and a wider *ethos*. Following G. Bateson, I understand *ethos* as a style of life of a separate culture defined by the value system, temperament, and personality of individuals acting as culture-bearers (Bateson 2000). In folklore studies, it is generally accepted that folk tale (fictional) prose differs from non-fiction prose by the narrator's and the audience's convention of non-reliability of the narrated events (Propp 1984, 54). However, it seems evident that folk tale content is not about the imaginary events of an imaginary life of a protagonist who has never existed, but the proclaiming and assertion of the tactics of dwelling in real life, as well as the ethical basis of such tactics and the choice of them.

The storyteller shares with her/his audience modes of action in various circumstances known to her/him and also provides justification for selecting this or that mode. The listeners of the folk tale react to the offered modes of action by either sharing or condemning them, which means they identify proposed tactics and make them the matter of their discussion. In 2017, at Ust-Kyma village in the Arkhangelsk region, we recorded a one-hour story-telling performance by Nina Fyodorovna Klimova. She had heard these tales from her grandmother (born approximately in 1894), who told stories in the evenings to her small granddaughters before they fell asleep: "She knew a lot of tales. Like, we read a tale at first, and then she re-told it to us. But she painted them in another colour, if you see what I mean"[1] (Durakova 2017, 2). Nina Fyodorovna perceived such tales as horror stories: "She knew how to scare us …"; however, it was probably one of the reasons that young Nina remembered the tales so well "because I was petrified".

Following Michel de Certeau's concept, I assume that narrating serves the task of verbalising the *modi operandi* and the way of thinking in real life: "Tales and legends seem to have the same role. They are deployed, like games, in a space outside of and isolated from daily competition, that of the past, the marvelous, the original. In that space can thus be revealed, dressed as gods or heroes, the models of good or bad ruses that can be used every day. Actions, not truths are recounted" (De Certeau 1984, 23).

Folk tales as an oral activity and as a special interaction of the narrator with his/her audience are not only a description of events happening in an imaginary world. They are also a presentation of methods of acting in various life circumstances and the means of influencing the listeners. Different folk tale genres or, to be more exact, folk tale plot patterns, demonstrate various methods of such actions.

In Russian folklore studies, folk tale genres are generally classified as follows: *cumulative tales*, *animal tales*, *trickster tales*, *tall tales* (false stories), and *fairy tales* (Propp 1976, 47). Folk tale genres are based on key composition patterns:

1 All translations from Russian into English in this text by the author.

- the cumulative pattern[2] in cumulative tales;
- the trickster's tricks pattern in trickster and animal tales;[3]
- the pattern with a sequence of functions, from deficit/damage to their elimination, as defined by V. Ya. Propp (1928), is a composition unit with an act or deed of the tale character; a specific pattern for fairy tales;[4]
- the pattern which is based on the formula of the impossible constitutes the composition of tall tales.

Reflecting on composition/plot pattern typology from the point of view of their origin and importance, not only for narrative practices but for the culture in its entirety, Yu. M. Lotman (1992, 242) comes to the following conclusion: "The plot is a powerful weapon for life comprehension. Only due to the creation of the narrative forms of art has a man learned to identify the plot-like aspect of the reality, to dismember a non-discreet stream of events into several discreet units, linking them with certain meanings (i.e. semantic interpretation) and organizing them in consecutive orderly chains (i.e. syntagmatic interpretation). The accentuation of events as discrete units in the plot and attributing certain meanings to them, on the one hand, as well as providing them with definitive timely, causative-consecutive, and any other sequences, on the other hand, form the essence of a plot. […] The more a man's behavior acquires features of liberty as compared to the automaticity of genetic programs, the more important it is for the man to build the plots of events and behavior. […] When people create text with plots, they learn to identify plots in real life and thus interpret life for themselves". For me, the most important provisions are the following: First, the plots of imaginative narratives are directly linked to an understanding of the plots of life, second, the identification of the plots in life is both a creative and a reflexive process, and third, people learn to divide and identify. It is also significant that each person has to undergo the whole process of learning. Folk tales are the training that enables the comprehension of the plots in one's own life and the awareness of behavioural scenarios that are acceptable to the culture.

The earning of competencies presented in folk tales takes place step-by-step. A schematic description of this process assumes an almost unconscious familiarisation with the very early childhood tales of the cumulative type. Our interlocutors often inform us that they used to tell their children cumulative tales about animals. The next are the tales about already-known animal protagonists with trickster-type plots. The comprehension of fairy tale plots requires developed competencies of the listeners as, in any fairy tale plot, the journey from wrecking to elimination embraces both cumulative and trickster elements. Our next step will be the analysis of roles attributed by narrators to the bear protagonist in Russian folk tales. Also, we will try to find out which modes of acting in a weak or a strong position this character embodies.

The materials for my analysis come from various sources. First, statistics for each type of Russian folk tale with a bear-protagonist or bear character can be found in the CIP, which comprises all published folk tales in Russian up until the beginning of the 1970s. Based on this material, we will define the plot types in which we can most frequently meet the bear.

2 Folk tales in which the plot is built on the creation of a consecutive chain of bodies, deeds, meetings and acquisitions and which end with the destruction of the created chain. The hierarchies, orders and relations are established in these plot patterns, while the performance versions may vary with a good or bad ending for the protagonist.

3 In Russian trickster tales, peasants always deceive the landlord, gypsies very often deceive peasants, fools usually deceive normal people, and wives often deceive husbands.

4 Thus, a fairy tale is "a genre of tales, which begins with inflicting some harm or damage (kidnapping, exile, etc.) or in which a deficit or desire to possess something (a tsar sends his son to fetch a firebird) is developed through exiling the protagonist away from home with a mission, him meeting a donor who gives him a magic device or a helper to find and acquire the target of the search. Further, the tale sequence embraces a combat with an enemy (snake-fighting as the most important one), return and pursuit" (Propp 1928, 22).

Second, another source of material in the form of modern folk tale records from the end of the 1970s until the present is the Folklore Archive of St. Petersburg University. For the last 40 years, this archive has been replenished by sound recordings and their transcriptions with context links to the data about narrators, the history of their repertoire and narration circumstances. We also use research publications of folk tales made during the last decades as auxiliary material. Modern folklore materials provide a source for the assessment of the degree of popularity of the bear character in present-day Russian tales.

The editors of the almanac "Russian Bear: History, Semiotics, Politics", Oleg Riabov and Andrzej de Lazari, declared in the introduction: "The bear in Russia is more than a bear – especially nowadays when it is transformed into the national symbol, being widely used by specialists in political technologies, journalists and marketing experts. It also functions as an allegory of Russia in foreign cultures, occupying an important place in the system of images, symbols, metaphors with a strong effect on the attitude towards Russia and the Russians" (Riabov/De Lazari 2012, 5). Taking into account the relevance of the Russian bear metaphor for our partners in international communication, in this article we are yet mostly interested in the meaning of this metaphor strictly within Russian culture. By analysing the folk tales that folklorists have recorded during the last 20 decades, we will try to understand which types of bear characters are popular in Russia and what sorts of underlying values and hierarchies they represent.

We find 97 folk tale plots with the word "bear" in the glossary of the CIP.[5] Thirty-one plots out of 97 have variants only in the Ukrainian and Belorussian records, and 16 have only one recorded version, so they do not meet the repeatability criteria. Three more plots are recorded by reference to the words "female bear". Three of four cases mentioning "bear cubs" include "cub accompanies its mother" (female bear), and there is one more where bear cubs are victims of the fox. Thus we have selected 46 plots with multiple records in Russian for our analysis. All plots have been attributed by plot pattern and further reviewed from the point of view of the role performed by the bear in each genre: tall tales, cumulative tales, trickster tales and fairy tales. Any further references to the bear in brief plot descriptions are rendered with the pronoun "he" in all its forms, unless otherwise specified, due to the male bear being the target of the study and the most common character among all gender and age bear groups.

Tall tales (also known as false stories) remain distanced from other folk tale genres. Their common feature is the fictitious element that unites this type with the rest of the folk tale types. However, in tall tales, the fictitious is prevalent. As compared with other folk tale genres, the tall tales are rather weakly organised in the plot-building aspect. Mostly, the tall tales are created not as a sequence of events but as a string-like arrangement of the same rhetorical technique – the so-called "formulas of the impossible". In the CIP only one tall tale with a bear as its character is marked in the glossary – it is called "The Miracle of Miracles".[6] Its content tells us what we shall NOT wait for the bear to do in the "normal" Russian folk tale. The bear flying high up is the "impossible formula". In folklore poetic

5 For comparison, we give statistics on the most popular characters from the animal world in Russian fairy tales. According to the CIP, the leader in frequency is the wolf. The glossary contains references to 145 East Slavic fairy tale plots, of which 78 plots are known in the Russian material and 55 plots are recorded in a variety of variants. Also a popular Russian fairy tale character is the fox (112 East Slavic plots, 52 of which are recorded in Russian, 34 are presented repeatedly). Domestic animals are far behind in popularity. One of the most popular fairy tale characters – the rooster – is mentioned in only 31 East Slavic fairy tale plots, 14 of which are recorded in Russian, ten repeatedly. Thus, the bear is in the top three (the first place is for the wolf, the second for the fox) in terms of the participation of the animal character in Russian (and East Slavic) fairy tale plots.

6 CIP 1930C* = AA *1931. In "The Miracle of Miracles", the sea is burning, a ship is running on seawater, a bear is flying high up in the sky, etc. Here and below: AA – reference to the corresponding number of the plot in the Andreev-Aarne index (Andreev/Aarne 1929), AT – reference to the corresponding number in the Aarne-Thomspson index (Aarne/Thompson 1964).

birds can fly: from the real world to the other world, from winter to summer, from the home world to the big world called the "clean field". At the same time, birds are a stable metaphor for women in folklore (Bernshtam 2003). Let us turn the poetic logic in the reverse direction. In the real world birds fly, and in the artistic imagination women are like birds. Bears fly in an extraordinary world and, even in the poetic, a bear is not like a bird; their imagery does not intersect. The tall tale, literally in two words, states that even in a fairy tale the correlation of the image of a bear with the categories of bird / feminine is impossible.

Now let us pay attention to the folk tales that are told to the younger audience, whom the narrators call "not so smart". As I already mentioned, modern female narrators said that they had chosen cumulative tales for the youngest children. According to the CIP, the bear takes part in six cumulative plots: "Fly's Chamber",[7] "Roly-Poly",[8] "No Goat with Nuts",[9] "Bear on Lime Leg",[10] "Song of a Wolf (Bear)"[11] and "Beasts in a Winter Hut".[12] Judging by the quantity of plots with the bear as a character, the cumulative tales are the less numerous among all genres; however, judging by the number of recorded versions (128 units, recorded in CIP, without taking into account the archived and modern materials), they are quite compatible with fairy tales. The proportion between the "classical" (before the 1970s) and modern (from the 1970s until present) tales is demonstrated by records of the folk tale "Bear on Lime Leg"; the plot is known in 23 "classical" and 30 modern recorded versions. So it is evident that the cumulative tale plots are still quite popular.

In cumulative tales, for example, in "Fly's Chamber" (CIP 283B* = AA *282 B), the plot is arranged as a sequence of connected links. Each link represents an arrival at the fly's house of a new insect or beast. Every new visitor is of bigger shape and he/she makes acquaintance with the house inhabitants. Generally, in a cumulative tale, the plot ends by breaking or disrupting the logical chain of events. In the series of visits to the fly's house, the last arrival becomes fatal. The bear is the largest animal, he cannot get into the chamber, sits on the house and destroys it. This plot is known to the majority of Russian-speaking audiences via oral performances (the plot is quite simple for memorisation due to the formalised nicknames of the characters) or via listening to children's books being read to the children by their parents. The bear semantics in the tales with the simplest plots – the cumulative tales – are evident at first sight – the bear is the largest animal, so he is the most dangerous. However, in the popular "Kolobok (Roly-Poly)" plot, in which Kolobok (a round cookie that has come to life and run away from the old man and his wife) encounters the hare, the wolf, the bear and the fox, this logic does not work. Kolobok manages to escape from the first three animals, but the smaller, female fox turns out to be the most dangerous. Because of her cunning she is the one who eats Kolobok in the end.

The folk tale "Bear on Lime Leg" (CIP 161A* = AA *161 = AT 163B*) is unique among the cumulative tales, because the bear acts here as a protagonist. This plot has been identified only in East Slavic materials in relation to other national Slavic and European corpora of tales. In the collection

7 "Fly's Chamber": The fly, the mouse, the hare, the fox, the bear go into a mitten (a wagon); the bear comes in last and crushes them all. CIP 283B* = AA *282; 21 versions.

8 "Kolobok (Roly-Poly)": A bread/cookie of a round shape (*kolobok*) runs away from the old man, the old woman, the wolf, the bear, etc. CIP 2025 = AA *296; 15 versions.

9 "No Goat with Nuts": The nanny-goat fails to come back from the forest, so the wolves and then the bear are sent to fetch her back; the goat returns safely in the end. CIP 2015; 24 versions.

10 "Bear on Lime Leg": The bear comes to the house of an old man and his wife for his axed paw, singing a song in which the bear asks them to return his paw: 366A*. CIP 161A* = AA *161 = AT 163B*; 23 versions + 30 modern interpretations.

11 "Song of a Wolf" ("Bear" less frequent): The wolf entices animals (sheep, hen, heifer) from the old men by his song and tries to eat the old man's wife (to steal his granddaughter). CIP 163 = AA *162; 23 versions.

12 "Beasts in a (Winter) Hut": The ox, the boar and the rooster drive away the wolf (bear, robbers), who tries/try to enter into their house. 130A – Animals built a house; 130B – Animals run to the woods to save their lives; CIP 130, 130A, 130B = AA 130).

of folk tales recorded over the last decades and stored in the Folklore Archive of St. Petersburg State University, it is one of the most popular. In the Vologda collection of the archive, there are 139 tales (35 plots or contaminations), and nine of them are the versions of the "Bear on Lime Leg" pattern. Eight tales have been performed by women and one by a man. Two out of eight female narrators informed us that they had learned the tale from their grandfather or father,[13] who often went to the forest hunting and told their children and grandchildren the stories based on his experience, mixing truth and lies. So, in the middle of the 20th century, this tale was narrated both by men and women, while at the end of the 20th century – when tales were recorded by folklore scientists – the narration of tales had become mostly the women's practice.

The tale's storyline is as follows: a *baba* / a *starukha* (a middle aged /an old peasant woman) sends her *muzhik* / *starik* (a peasant man / an old man) to the forest to get meat from the bear's body. The hunter axes away one of the paws of a sleeping male bear. The bear wakes up and makes a leg out of lime wood instead of the lost paw (as a result the bear has three paws and one lime leg). Then the bear goes to the village looking for his paw singing a threatening song (accusing the old woman of using his paw in her household routine). The old man and his wife hide from the bear in their *izba* (cottage) or start to bargain with him. The performers say that the tale can have a bad (the bear eats the old man and his wife) or a happy end. The happy end is considered preferable when the story is narrated to the smallest children.

The bear's threatening song consists of three parts and a final exclamation: "Om nom, I'll eat you!". In the first part of the song, the bear addresses his lime leg: "Screech, my leg, screech, screech my lime (birch) leg". In the second part of his song, the bear recites various types of dwelling places (*selo* [a large village with a church] and *derevnja* [a small one with only a chapel]), where "normal" inhabitants sleep, as opposed to the guilty (old) woman who is not sleeping: "All villages sleep, both big and small, only one woman is awake". The song's third part accuses the old lady of her use of the bear's paw: "She sits on my skin, she sucks my flesh. I'll eat her the moment I see her! Om nom!".[14] The Vologda versions of the plot have one more peculiar feature; in them, the old man and his wife play "hide-and-seek" with the bear. In the majority of variants, the old couple hides in the stove leaving a trap for the bear by opening the cellar's trapdoor on the floor. The Russian stove (*russkaja pech*) occupies the central place in the Russian village house – it heats the inside space, food is cooked in it, water is heated and boiled there, people sleep on it, get warm, and dry their garments and food stores. However, an adult can hide inside the Russian stove only if it has been specially built with a high arch and sufficient inner space. This type of stove is found only in areas where bathing and washing inside stoves is a habit. It is worth mentioning that the area where the plot of the "Bear on Lime Leg " is most common, according to A. B. Ostrovskiy, – the Higher Volga region and the Vologda region (Ostrovskiy 1990) – coincides with the locations where there is a custom to wash in the stove. That is how A. V. Stepanov describes this hygienic and health-preserving habit: "The practice of washing, bathing, and steam-bathing in the Russian stove with an oven was quite common in the Russian North together with the 'bathing tradition'. Washing in the stove is related to the so-called Rostov-Suzdal colonisation of northern territories (by people from Rostov Velikiy and Suzdal regions, which were the central areas of Russia in the 10th to 17th centuries and still are). The height of the stove arch in regions where it was used for bathing was particularly high. People bathed in stoves

13 Folklore Archive of St. Petersburg State University, Vash 16-14. Recorded from Polina Alexandrovna Gorodnichnaya (born in 1928), in the village of Bereznik at the Roskomsky village community of Vashkinsky District in Vologda Region on 14.07.2002 by O. I. Alimova and E. E. Samoylova.

14 Folklore Archive of St. Petersburg State University, Syam 16-24. Recorded from Valentina Efimovna Voronova (born in 1928 in the village of Bor) in the village of Makarovskaya at the Dvinitskiy village council of Syamzhenskiy District in the Vologda Region on 30.07.2006 by Yu. Yu. Marinicheva.

when these had become cool enough after fuelling and the stovepipe had already been closed. One would have to go into the stove and leave it with one's head first. People bathed sitting with their feet directed towards the stove opening. The damper could be closed to save the heat. Newborn children of up to 40 days of age could also have been washed in the following family tradition: The grandmother (a mother-in-law or a healer) got into the stove, the mother handed her the baby, who was placed on the straightened legs of the woman in the stove with its head to the feet of the woman. After washing, the grandmother handed the baby back to mother with its head first" (Stepanov [no date]).

From the recordings of oral performances of this tale in circumstances close to natural ones (narration for grandchildren in the presence of the recorders, or for the recorders who were in the same age group as the performer's grandchildren), it becomes evident that the narrators did not take any pains to accurately reproduce the twists and turns in the plot, but had the primary objective of frightening the audience or maintaining its closest attention. Raisa Fyodorovna Moskovtseva told us the tale about the bear[15] several times and her story always ended unexpectedly; either by pinching the listener's side at the end of the bear's song or by discourse about the material of the bear paw prosthesis or by reminiscences of the tale being performed by her grandmother. In the latter case, the narrator added the grandmother's "horror" riddles ("Where is the bear's eye in the room?" [a knot in the wood of a floorboard], "Where is the bear paw in our house?" [the broom]). The difference in the performances of the same plot demonstrates the secondary role of the plot for a narrator. The plot is just a pre-requisite for a storytelling, and the performer is free to improvise based on the storyline, seeking her/his own communicative goals.

Anna Vasilyevna Voronicheva, when narrating the tale, performed the bear's threatening song three times.[16] However, in her performance the reminiscences of her reaction as a small girl to the singing of her grandmother in the "horrifying" bear voice ("All of us: 'Oh, oh, oh, will he really eat us?'"; "All of us: 'Oh, how terrible!!!'") are more important than any variances in the tale composition. Just like other narrators, A. V. Voronicheva recollects the skills and the tricks of performers from whom she has learned the tale, such as intonations, gestures, movements and interposition with the listeners (sitting together on a stove). When talking about her fear in the course of listening to the tale, Anna Vasilyevna also remembers with relief the sense of the audience's common joy when the old couple were victorious over the bear. In one of the archived tale versions, the theme of the old man and his wife hiding is replaced by the description of the ongoing approach of the bear – past the window, through the door, to the stove and the berth, where the old woman lies in the tale, but also where the children are listening to the performer. The narrators describe the circumstances at the time of the tale-telling as sitting on the Russian stove (the one to which "the bear is approaching") before bedtime or near the stove in the course of common labour activities in the form of spinning. For the time being, we shall not pay too much attention to the fact that the bear in the tale threatens the old woman, though his paw has been axed by the hunter. The fact that the addressee of the bear's song-threat is the woman, and that the main plot interactions take place between the bear and her, leads us to assume that the basic character relations here are developing between the woman and the bear. How these relationships are presented in fairy tales, we will see later. Now we have all the evidence to suggest that performers of the "Bear on Lime Leg" plot insisted on reproducing a suspense effect, well known to them since their childhood. The suspense is created by dwelling on the borders

15 Folklore Archive of St. Petersburg State University, Syam 16-24. Recorded from Raisa Fyodorovna Moskovtseva (born in 1932 in the village of Martyanikha) in the village of Goluzino at the Goluzinskiy village council of Syamzhenskiy District in Vologda Region on 15.07.2005 by S. B. Adonyeva and I. S. Veselova.

16 Folklore Archive of St. Petersburg State University, Kir 16-3. Recorded from Anna Vasilyevna Voronicheva (born in 1924 in the village of Uloma) in the village of Ivanov Bor at the Ivanovoborskiy village council in the Kirillovskiy District in the Vologda Region on 20.07.2006 by M. D. Karmanova.

between the safe and the horrible. Folk tales unlock these borders on the levels of composition, semantics, pragmatics, and perception. First, a folk tale is embedded into a chain of stories in such a way as to conceal the difference between fact and fiction (for example, the hunters-storytellers mixed the tale performance with true stories of their own forest experience). Second, the folk tale's imaginary universe provides for the mutual crossing of the borders between human beings and the bear: greed and self-interest bring the hunter to the forest for easy loot, the bear takes revenge for the harm done by coming to the man's own house (in the village). Third, the very place of the tale performance coincides with its poetic universe (village, house, stove). Fourth, the narrator partially becomes the bear with the horrible singing voice and with three paws and one lime leg, who pinches the listener's side "on behalf of the bear". The suspense accumulates and intensifies due to the narration taking place at the time when the audience is caught between wakefulness and sleep, by the travelling of the bear from the forest to the village, the non-obvious frontiers between facts and fiction, the transition from singing to prosaic utterance and back, the intonation change from the "frightening" singing voice back to normal speech. Every feature helps to create and maintain the borderline condition of the audience throughout the performance. The memory of the received impression remained intact from childhood to old age. Former listeners remember the growing fear from the approach of the singing bear on a screeching artificial leg, the joy when he is overcome, or the horror of imminent death (depending on the tale finale selected by the performer in each case).

So, the number of plots of the cumulative tales with the bear among its characters is limited but the number of records is quite impressive, confirming the fact that the bear was easily identifiable and popular. The "Bear on Lime Leg" is the most common one and helps the narrator to teach his audience how to act in the atmosphere of suspense between the threat of perishing and the chance of rescue. The bear becomes a source of fear, which is realistic for those who live in a village near the forest and know the stories about real animals.

Now we move on to the analysis of the next type of plot – with the trickster and his victim. In trickster tales, where there is a competition between a cunning person and the victims of his/her deception, the bear as a character has a profoundly other nature. The CIP contains references to 34 plots that we identified as trickster's – based on cunning tricks in which the bear plays at least some role. In twelve plots out of 34, the tricksters (usually peasants) use the bear or mimic the bear to frighten their victims and obtain from them the desired object. In these plots, the bear becomes a tool in the hands of a "smooth operator". Trickster use the habitual (according to life experience and collections of fairy tales) fear of a bear in a trick with "false danger".

In 22 plots, the bear acts as a full partner in competitions and tournaments that occur in the folk tale. However, the plots of trickster tales do not indicate the winner in advance. The trick/tale outcome depends on the balance of power and the circumstances in which the trick is played. For example, in household folk tales, where the actors are a peasant vs. his wife or a peasant vs. a fox, the deceiver and his victim often swap roles. In the combat "peasant vs. the devil", the peasant will be victorious in most cases. Let us analyse the bear's chances of victory in the Russian trickster tales. In CIP 1030 – "Harvest Sharing"[17] – the partners arrange who will get a particular part of the planted crop after harvesting. The trickster (the peasant or the bear) uses his knowledge about the edible part of each crop (the upper part for wheat and the roots for turnips). The trick outcome depends on the participants of the circle of negotiation. The bear has a chance of victory if his counterpart is the devil or the fox. If the bear is facing the peasant in these negotiations, he will lose. In three plots ("The Bear on a High Wagon" [CIP 16], "The Dog and the Wolf/Bear" [CIP 101], "The Huts Made of Bast and

17 CIP 1030: "Harvest Sharing". "I will get the upper part of the crop and you will get the roots", arranges the peasant (the bear) in his agreement with the devil (the fox), and they plant wheat; the next year, the upper part is promised to the devil, but, because turnips are planted, the devil is again outmaneuvered.

Ice" [CIP 43]),[18] the bear enjoys a small chance of winning: mostly through successful collaboration with the dog (CIP 101) or with the rooster/tomcat (CIP 43). In 17 trickster plots, the bear loses the combat to the peasant (nine plots), to the peasant's wife (two), to the fox (five), and to the devil (one). We can see that the peasant is the most common counterpart of the bear in the competition between them and that the bear cannot succeed. In two plots, when the peasant's wife enters the scene she also manages to outsmart the bear. One episode of the woman's victory is present even in an erotic tale[19] in which the bear acts as an unlucky sexual partner of the woman (this plot had widely circulated in the form of the *lubok* pictures). Another plot about the woman's victory looks similar to the "Bear on Lime Leg" plot (CIP 161A** = AA *160 I); it is called "The Bear and the Old Woman".[20] Here, an old woman meets the bear by accident, and he threatens to eat her. The old woman promises to give some gifts to the bear in exchange for her life, naming them Strongie, Warmlie and Further-Feather. However, these gifts are not the names of valuable animals but false promises. The old woman plans to close the door with a *strong* lock, hide in the *warm* stove and escape any *further* revenge. In contrast to the "Bear on a Lime Leg" plot, the "Bear and the Old Woman" plot is distinguished by the absence of a repetitive bear song. In the plot of "The Bear and the Old Woman", the repetition and development of the old woman's trick comes to the fore. In five more plots, the bear falls victim to the fox's tricks.

Thus, in the trickster tales, the bear is very rarely a winner. If he succeeds, he mostly acts as a tool in the hands of a more advanced actor (the peasant or the dog), or cooperates with a better player (the dog or the rooster). In cases of any open intellectual one-to-one combat (with the peasant, with his wife, or with the fox) the bear mostly loses.

In this article, we have not been able to track down who was the narrator of the tales about winning over the bear and to what audience they were performed. However, we may point out that trickster tales require developed narrative competencies from the audience – the narratees must know how to identify the actors' interests and the cunning means of the deceiver. It looks like the trickster tales were told to listeners who were already familiar with the lessons taught by the cumulative tales. These establish the accepted order and hierarchy and they perform the function of marking the "strong" and "weak" positions in the social universe. As for the trickster tales, they teach how to behave in a world where one constantly finds oneself in a weak position. This suggestion comes from the development of the concepts of "tactical behaviour" introduced by Michel de Certeau, and the "weapons of the weak" made known by James Scott. Both de Certeau and Scott think that the "weapons of the weak", being the means of the non-evident resistance of those who are being dominated, include gossiping, rumors and anecdotes about the mighty, as well as legends and tales in which a character who was originally weak wins at the end (De Certeau 1984; Scott 1985). The trickster tales provide in their opinion both a description of the "weapons of the weak" and a vivid demonstration of utilising such weapons. Thus, any victory over the bear in tales provides a person with a chance of winning (however imaginary) over a horrible and dangerous partner. Everybody with experience of visiting the wilderness knows how dangerous the bear can be, so any success in an interaction with the "master of the forest" depends on the wits and skills of his counterpart.

18 CIP 16: "The Bear on a High Wagon". He is taken by mistake for a priest (a general). Only two versions of this plot are known. – CIP 101: "The Dog and the Wolf (Bear)". The wolf organises the kidnapping of a baby (a sheep) with the dog and lets the dog snatch it from him for the dog to get food from his master. – CIP 43: "The Huts Made of Bast and Ice". The fox builds an ice hut for herself, while for the wolf (the bear, the hare) she builds a hut made of bast. In spring, the fox's hut melts and she tries to get possession of the bast hut.

19 CIP 152C*: "The Bear and the Woman". They wrestle after having come to an agreement that the bear shall bring the woman a hive full of honey if he occasionally tears something which belongs to her; the deceived and disgraced bear runs away.

20 CIP 161A** = AA *160 I: "The Bear and the Old Woman". The old woman survives the encounter with the bear, promising him Strongie, Warmlie, and Further-Feather as ransom; then she interprets her promises in her favour.

The Russian trickster tales (with animal and human characters) create a variety of plots. We can see a range of cunning tricks to be used in situations when any direct stand for one's interests is not possible. Sound recordings of performances of such tales stored in the Folklore Archive of St. Petersburg State University provide the evidence that the natural situation for trickster tales (or traditional anecdotes) narration is not only the performance by the elder to the younger, but rather the storytelling in a group of people of the same age sitting around a festive table or in any other informal circumstances. The archive contains several records of continuous performances of tales told in a row in a female company with such cross-cutting plots as "Lazy Wife" and "How Muzhik Taught His Wife". Despite the didactic titles, lazy wives in these tales turn out to be wiser and luckier than their husbands. The general response to the story about each successful trick was a burst of laughter, creating the effect of women's solidarity in resistance against the established forces, laws, and social/natural order. Regardless of the fact of who the winner is in each round of the tale – the wife or her husband, the old woman or the fox, the woman or the bear – the victory is never ultimate, and a smart trick will be highly appraised by the audience.

Finally, I would like to analyse the bear as a character in fairy tales, which are tales *par excellence*, i.e. they belong to the genre that first comes to the mind of any folklore specialist or native speaker when folk tales are mentioned. Most often, this type of tale ends with the victory of a protagonist, they contain magic and the action takes place "once upon a time" in an imaginary land.

There are four fairy tale plots with bear characters known in Russian folklore.[21] The bear plays the main role – of the antagonist and the donor – in plots marked as CIP 480 = AA 480*B, *C and CIP 311. In these cases, the protagonists are girls of pre-marriageable age. These tales are considered metaphoric descriptions of the wedding trials and female initiation in Russian traditional culture. In plot CIP 311, three sisters come, one by one, to the hut in the woods; the elder sisters break the ban set by the master of the hut (and of the forest) and are punished, while the last and youngest one passes the test and in some versions becomes the bear's wife: "So she walked and walked and came to a hut. She enters the hut and sees the bear who is sitting there fuelling the stove. The bear says: 'Oh pretty lass, do some weaving for me, and if you fail I'll cut your head off.' She weaved and weaved and succeeded. So they started living together" (Simina 1975, text nos. 17, 91).

The girl's willingness for the marriage has been defined in the village culture not only by physiological but rather by social maturity. The latter, as T. A. Bernshtam proved, was related to the girl becoming skilled in "artful handicraft", which was the combination of spinning, weaving, sewing, embroidery, singing, and circle dancing (*khorovod*) with the girl's erotic capabilities (Bernshtam 1999). These particular skills are demonstrated by the brides in fairy tales. As for the studied plots, the testing is done not by the *tsar*, the *tsarina*, or the bridegroom, which are common trial arrangers

21 The plot titles below are cited with CIP reference numbers. Each plot title is followed by its description from the glossary and the number of versions recorded therein: CIP 480, "Stepmother and Stepdaughter". The stepdaughter is taken to the forest; Morozko (Baba Yaga the witch, the forest spirit [*leshiy*], the wolf, the bear) tests the girl and rewards her (AA 480*B); the stepdaughter plays hide-and-seek with the bear, she is assisted by a mouse. 26 versions. – CIP 311: "Bear (Leshiy, Sorcerer) and Three Sisters". The elder sisters violate the prohibition to enter a special room and are murdered; the younger sister resuscitates them, hides them, conceals her visit to the banned room, makes the killer take the sisters and then herself to their home, banning him from looking at the "gifts for parents" (flees, leaving a doll on her bed). 20 versions. – CIP 650A: "Ivan the Bear's Ear". A young man (the son of a bear in many cases) shows incredible strength (at a blacksmith's shop, in the forest), sometimes brings mischief (does damage) to his master, of which his master complains; the young man goes into exile, he accomplishes feats. 43 versions. – CIP 315: "The Beast's Milk". A sister (mother) conspires with her lover to kill a young man and sends him to fetch the milk of a female wolf, she-bear or lioness, pretending to be ill; binds him; the protagonist saves his life with the help of the beasts – wolf, bear or lion cubs; destroys his enemy, punishes the hypocrite sister (mother). 72 versions.

in fairy tales, but by the most dangerous of forest beasts (the bear, the wolf) or forest spirits (Morozko[22], *leshiy*[23]).

Folklorist Ivona Zhepnikovska, in her article "Bear in a Russian Fairy Tale", asks why a bear, a wolf, or a forest owner act in a synonymous position as antagonists in both plots (CIP 480 = AA 480*B, *C and CIP 311). She writes: "The interchangeability of a bear and a wolf is explained by similar demonological concepts, including the ability to shape-shift, marriage and erotic symbolism. […] Isomorphy of the bear and *leshiy* is predictable and can be explained by their genetic relationship. The bear is *leshiy's* prototype […], because the cult of the forces of nature, embodied in *leshiy,* among others, has been preceded by the cult of totems" (Zhepnikovska 2012, 63). She links the mythological sources of folk tales with a totemic cult. The bear, the *leshiy* and the wolf are, in her opinion, metaphoric "ritual specialists" in a girl's *rites de passage*. The girl who passes the test, in which her life is at stake, receives her life back and a great dowry, while the one who fails perishes or gets rubbish instead of a dowry in more-merciful-to-the-audience versions. While, in CIP 311 tales, the trial lies in the sphere of the young girl's handicraft and household skills, in the tale of the CIP 480 plot, *Morozko*, or the bear, is the trial-setter who checks the heroine's patience (test by cold in the forest) or her ability to play the blind man's buff game (*zhmurki*).[24] In I. Zhepnikovska's opinion, "the idea of death and resurrection, perpetual regeneration and the repetition of life cycles forms the basis of the game of *zhmurki* – one of the key trials, which female protagonists of tales of 'Stepmother and Stepdaughter' type undergo because […] 'the blind looking for the sighted' theme is a synonym of 'the dead looking for the living' topic. We observe another confirmation of the exclusive predetermination of the bear to fulfil the role of a creature opening the mystery of life and death to the fairy tale female protagonists and, which is also quite important, the interdependence of both phenomena" (Zhepnikovska 2012, 70). Special relations between bears and women are captured in the Russian stories about encounters with the "master of the forest" (the name for both *leshiy* and the bear in the speech of past and modern country people living in the Russian North) as well as in Russian folk pictures such as "The Bear and the Peasant Woman" (Lubok 1984, fig. 91), in which the plot of the above-mentioned erotic tale CIP 152 is presented. One such detailed story was recorded by Evgeniy Baranov in a Moscow tavern in the 1920s from a 60-year-old woman. It is a long story that starts with the forced concubinage of a countrywoman with a bear and the birth of an ugly boy from this affair ("with a human face but the arms and legs of a bear, and the bear's ears as well"). After returning to the village, the woman begs for pardon from her husband and her landlord for her long absence and the birth of the bear's son. Then she asks a bishop (*archierey*) and the *tsar* for permission to christen the baby. In the end, the decision is taken to make the boy an exhibit in a museum and issue a pardon for the woman ("What was the poor woman guilty of? She probably did not enjoy her life at all.")

22 Morozko ([Grand-]Father Frost) – this is the name of the character who, in CIP 480, tests the main girl character. A father, at the request of the stepmother, leaves his own daughter (who is of marriageable age) in the winter forest for the night. There, Grandfather Frost (Morozko) asks her if she is cold. The fairy tale does not describe Morozko's appearance, we only know that he knows how to control the cold. The girl politely answers him three times that everything is fine, although she is freezing. He leaves her alive and rewards her with a rich dowry. The second girl (the stepmother's daughter), in a similar situation, rudely responds to Morozko, for which he freezes her to death. In a fairy tale with this plot from the Folklore Archive of St. Petersburg State University, the storyteller, in the finale, reports that "grandfather" was the Master of the Forest: "What kind of grandfather was that?" > "The grandfather of the forest."; cf. Folklore Archive of St. Petersburg State University, Bel 16-1. Recorded from Anna Marovna Antonova, born in 1906, in the village of Mitino, Belozersky District, Vologda Region, July 6, 1997, by E. A. Migunova, M. M. Pirogovskaya and A. Yu. Ponomareva.

23 *Leshiy* (*lesnoj, leshak*) – a forest spirit or a master of a forest. According to the Russian traditional worldview, each locus has its own metaphysical master. In stories about encounters with a wild beast in the forest, the narrators often refer to the bear as "master of the forest".

24 *Zhmurki* is similar to Blind Tom or the blind man's buff game – a game leader with his/her eyes blinded by a bandage tries to catch other players in a closed area.

with payment of a pension to her from the treasury and awarding her a medal (Folklore treasures 1998, 285–290). The tales based on plots 480 and 311, folklore pictures, erotic tales and stories about events allegedly happening in real life allow the initiation of a woman by a bear, their sexual relations and common household and all the above-mentioned in various combinations. At the same time, there are no plots in the whole body of Russian folklore about any close relations between a man and a female bear. It means that the bear in Russian fairy tales is an embodiment of masculinity upgraded to the level of the mythical master of the forest and the ritual specialist.

The fourth remaining plot of the Russian fairy tale with a bear character marked as CIP 650A – "Ivan the Bear's Ear" – is a narrative with a male protagonist born by a woman from a bear. He possesses extraordinary strength and accomplishes unbelievable feats. This plot refers to stories about innocent, persecuted heroes.

Taking four tale genres as examples, we have tracked the realisation of the bear image in the system of Russian folk tale characters. In tall tales, we see as the "impossible formula" that a bear flies through the skies. In Russian folklore, birds usually fly between this world and the other in time and space. Birds are stable metaphors for femininity, so, the tall tale states that, even in a fairy tale, the correlation of the image of a bear with the categories of bird/feminine is impossible. The bear is a masculine image. The cumulative tales strengthen the bear's reputation as a mighty force. The trickster tales usually end with the bear losing the competition with the trickster (a man, a woman, a fox, and so on), thus allowing storytellers and their audience to dream about a victory over a mighty force and the established world order. Becoming skilled in tricks provides a chance of overcoming prevailing forces by cunning. The plots of fairy tales with the bears as donors and antagonists against a mythological background describe a provisional/ritual marriage of the woman and the bear. Such a marriage legitimises the supernatural powers of women. These powers are the appraisal of her skills (spinning, weaving, singing) and they demonstrate her erotic (fertile) capacities as well as the knowledge of the border between life and death. So, the bears in Russian folk tales play various and multiple roles: the embodiment of almost existential horror, the simpleton, the metaphysical master, and the ritual specialist. However, in none of his roles so far is the bear domesticated: he is a physical and metaphysical power that can be conquered by artfulness and deception, but in any other respect is quite unmanageable.

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Bears bring spring: An anthropological view on the role of the bear in middle European winter feasts

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Keywords: Bears, French Pyrenees, fête de l'ours */ bear feasts, fertility, pact with wild animals, animal symbolism*

Abstract: "Animals are good to think with", according to the French anthropologist Claude Levi-Strauss. They provide traits that help us to express our thoughts: Tigers thus symbolise ultimate strength, foxes ultimate cunning, and the bear is known to bring spring as soon as it emerges from its den after a long winter sleep. According to a widespread folk tradition, the bear is therefore associated with fertility. Several villages in the Pyrenees are known for their annual bear feasts with ritual elements: the fête de l'ours*. During this ceremonial feast, a man dressed as a bear is chased but also cherished and recognised for his fertility-bringing role in the lifecycle. In present-day society we only seem to fear the wild strength of the bear, but we might reconsider our attitude towards wild animals and take an example from the feast of the bear. We know very well how to cope with danger, as we take planes, trains and cars every day. So let us consider the multi-layered and ancient relationship humans had with the bear as an inspiration for a new pact with wild nature!*

Introduction

"Animals are not only good to eat, but also good to think with", said the French anthropologist Claude Lévi-Strauss (Lévi-Strauss 1964, 89 [French original: 1962]). Tigers symbolise ultimate strength, foxes ultimate cunning, and bears represent fertility. Animals thus provide traits that help us to express our own thoughts. They provide a means of ordering the world. Animals are also linked to seasons, especially spring – the explosion of renewed fertility in nature that we see around us at Easter. Nowadays, we do not emphatically dwell on the changing of the seasons, but this is a relatively new, 20th-century development. For the peasant population of Europe, not so long ago, the timely arrival of spring made the difference between icy cold and heat, dark and light, hunger and food, death or survival.

From the Balkans to the Pyrenees, the bear is known to bring spring as soon as it emerges from its den after a long winter's sleep. According to a widespread folk tradition, this happens on the second day of February. Whether or not it stays outside its den is crucial to how the winter progresses. If the bear is frightened by its own shadow – caused by the sun or moon when the sky is clear and therefore cold – it will return underground and sleep for another forty nights before spring begins. If not, the bear, often with cubs born in its winter lair, sets off and spring can begin. In countries such as Hungary and Romania, an army of journalists throngs the bear enclosures of the larger zoos on February 2. What are the bears doing? This is the crucial question that occupies the minds of news-

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1147–1158 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134383

papers and television, just like in America where, also on February 2, the behaviour of the groundhog is attributed this predictive value. The theme was explored in the 1993 film, Groundhog Day, starring Bill Murray as the grumpy weatherman.

A hesitant relationship

Our relationship with wild nature is changing and shows different tendencies. In Europe, awareness of the loss of biodiversity is increasing, as is demonstrated by recovery efforts such as the reintroduction of large predators: the bear and the wolf. Three bears from the Balkans were introduced into the French Pyrenees in 1996 and another five in 2006 to supplement the minimal local population. Today, 24 bears roam the mountains, much to the chagrin of local sheep farmers, who regularly find killed animals in their herds. The government is also not always in line with policies that protect nature.

This was also evident from the case of Bruno, the bear who roamed the border area between Germany and Austria (Fohrmann 2006). He had grown used to people. According to the local gendarmerie, this posed a danger, and he was therefore shot in 2006, without having threatened one person. We seem to have forgotten how, not so long ago, we lived with bears in large parts of Europe.

When we look for inspiration for a more equal and spiritual bond with wild nature, we tend to look for it in cultures outside of Europe, where that bond would be more "intact". In doing so, we risk overlooking the fact that in our own past, and in some places in the present, there are inspiring examples of a complex and multi-layered relationship with this impressive "king of the forest", whereby the boundaries between "nature" and "culture" overlap (Pastoreau 2011). It turns out, however, that in Eurasia we have a wealth of bear myths and ritual festivals in which traditional bear hunts and the fertility and prosperity-bringing powers of this animal are depicted (see different papers, this volume). In short, there is a diversity of stories and performances in which we recognise deeply-rooted cultural values.

R. M. Frank (2010; 2015; 2016) has done extensive interdisciplinary research on bear stories and rituals. This connects European and Siberian/Indo-American mythologies with bear festivals such as those celebrated in the Pyrenees. Frank considers the bear to be an ancestor of humans (cf. Frank, this volume). The bear plays his role as a central actor in good-luck visits; these are seasonal festivals in which a group of masked men, including a bear leader and a real or disguised bear, go from house to house receiving food and drink in return for blessings.

This tradition seems to have evolved in, or has blended in with, carnival. R. M. Frank sees the annual spring time bear feasts as connected to fertility, yet mainly understands them as a re-enactment of the traditional bear hunt, where the bear is killed and resurrected. This is a ceremony that is still performed by the Siberian bear-hunting Khanty (cf. Rydving, this volume). In the bear feasts held today in the Pyrenees, however, it concerns farmers who, perhaps even more than the hunters, depend on the return of the sun and fertility for their cattle and fields.

So, the bear as a fertility symbol and harbinger of spring is still very much alive in the Pyrenees. Bear festivals are held in three villages on the French side of the Pyrenees. The bear festivals are listed on the French National Inventory of Intangible Cultural Heritage. A bear (sometimes more than one, depending on the location), i.e. a fierce imitation of the real animal, storms through the streets and grabs the girls. He fully celebrates his wildness, strength and fertility and by doing so he engages the whole community. The three villages, Arles-sur-Tech, Saint-Laurent-de-Cerdans and Prats-de-Mollo, lie close together in the lowlands on the eastern side of the mountain range (Fig. 1). As Dutch anthropologists interested in the relationship between humans and wild animals, we are used to looking for our field of work in distant areas. The fact that "wildness" appears to be so easily accessible made us decide to travel to Arles-sur-Tech to experience the bear festival (Figs. 2–10).

In this article, we focus on the Arles-sur-Tech bear feast we attended in February 2016 (actually there were two similar feasts; on the first day, it was performed by the youth – a recent addition – and on the second day the "real" feast with adults was performed). What does this bear festival tell us about the place the bear occupies in the world view of the inhabitants of the region? What can we say about the bear's symbolic role? We also take a trip and compare the role of the bear in this ritual with that of other great man-eaters, the European wolf and the Asian tiger. And finally, we ask the question: Are bear feasts doomed to extinction with the disappearance of the bear from Europe, or is an old tradition constantly being given new meaning? What inspiration can we draw from this old connection with the bear and the rituals surrounding it, to reshape our difficult relationship with dangerous animals?

The 21st century and the feast of the bear

Winters have been mild throughout Europe in recent years. Snow only covers the peaks of the Pyrenees as we settle into Mas de Luna, a farmhouse just outside Arles-sur-Tech. On the morning of February 2, in the first pale light, men and women gather in the village café. They are wearing hunter's clothes; sturdy boots and camouflage jackets. They take their first glass of Muscat, the sweet white wine of the region, and begin to paint each other's faces with broad stripes of soot.

One of the hunters wears a curious mix of clothes. This is the trapper, a "hunter from Canada". His leather cowboy hat refers to that distant origin. The hat contrasts strikingly with his shirt, leggings and espadrilles, part of the Catalan costume of the region. The trapper is the hunter who will soon catch the bear. His hat makes him an unknown, unidentifiable person to the bear. Thus, the spirit of the dead bear will never be able to find the trapper to take revenge, the hunters explain.

All morning, the trapper and his gang move from café to café to recruit hunters. The crowd grows and the wine flows. The *poron*, a glass carafe with a long drinking spout, is passed from hand to hand. Robert Bosch (the local specialist and author of "Fêtes de l'ours en Vallespir" [The Bear Feasts of Vallespir]; Bosch 2013) will later cheerfully explain that the comparison with semen is lurking here. In the meantime, the trapper has been joined by his fiancée of the day, Rosetta. Rosetta is also in costume, but her long blonde braids and her breasts are fake: Rosetta is represented by a man.

The couple dances lovingly through the streets of Arles-sur-Tech. They stop at a small square. The crowd assembles in a circle around the hunter and Rosetta. In deadly silence, the trapper gives his first speech, his sermon. He announces that bear tracks have been found around the village and that the vile beast, the *mala bestia*, must be caught. The whole village cheers. Around noon, the group gathers at long tables in one of the village squares. They eat and drink with the other villagers, while the hunters loudly make oblique jokes.

After the meal, there is only one objective: the bear hunt. Accompanied by an orchestra composed of drums, bells and whistles, the mob heads for the river at the edge of the village. The trapper, Rosetta and the hunters cross the river. They comb the bushes on the other side and soon find the bear. The bear is wearing brown woolly overalls, but his head is covered by an impressive hundred-year-old mask, a wooden frame covered with goatskin and fitted with 26 large wooden teeth.

There is a struggle, the bear is chained up and then taken away to the village. But he soon escapes again. The bear is constantly making advances towards Rosetta, who beats him with her handbag. He gets beaten up by the trapper and then grabs the defiant village girls. Screaming, the girls run away, but not too far as being caught is bad, but not being caught seems even worse.

The music starts with the recognisable bear melody and they continue on. Now the bear takes off, slapping the plastic wine baskets that sturdy boys hold over their heads. The baskets are frighteningly painted with eyes and decorated with tufts of broom. The barrel bearers put up a fight, but

they keep falling over. Robert Bosch explains: Evil is whisked away and the new spring, the green, is liberated (interview with the authors, 2016).

The bear now makes a spurt. Big and hairy, strong and determined, he chases Rosetta right up on to the French balconies in the narrow streets. When he wants to take her from behind, she seems to appreciate it. But the trapper intervenes. Then the bear runs into the crowd, slings a girl over his shoulder and disappears with her into a den of pine branches. In this den their "marriage" takes place. The crowd cheers, the den shakes dangerously. When the bear comes out, the trapper shoots him.

In deadly silence, the hunters and Rosetta hoist the bear onto a chair. He gets a shaving cap around his head and is shaved by the trapper with a wooden axe and big gestures. Then the orchestra starts up again, the bear frees himself from his mask and takes a gulp of air. The village cheers and dances the *Sardana* together with the bear who, stripped of his wild hair, has now become human. The bear, whose name is Sebastien, turns out to be a valued member of the local rugby team.

Further remarks on the bear feast

It is difficult to estimate how old these "bear festivals" are, and appearances can be deceptive. What seems old, sometimes turns out to be a recent invention. The bear mask of Arles-sur-Tech, the locals say, is about 100 years old, but the bear skin for Saint-Laurent de-Cerdans's suit was recently imported from Canada. The bear claw, which the mayors of the three villages solemnly hand over to each other every year, is also a very recent "tradition". Other aspects may seem relatively new but have deep roots. For example, the hunter's humorous sermon contains medieval terms and concepts. Two themes seem dominant in the present-day performance of the symbolic hunt of the animal: On the one hand, there is its "killing" and resurrection and, on the other hand, there is the waking up of the bear on February 2, its sexual activities and final "marriage" in the constructed green in the village centre.

The theme of the hunt that we mentioned earlier has been linked to Siberian tribal groups that seem to have related customs. The interconnected rituals surrounding the dead bear go back to the prehistoric hunter-gatherer cultures of Eurasia (Frank 2015). The theme of the bear that brings forth spring, fertility and physical power, however, is, as we would like to stress, also crucial to the agrarian societies in the northern hemisphere, who suffered cold and lack of food at the end of the winter. In the present-day bear feasts of the Pyrenees and the related bear feasts in Europe, such as the one in Comanesti in Romania, as in oral traditions in northern and middle Europe, the role of the bear as a bringer of fertility is central.

In the bear festival of Arles-sur-Tech, the bear is an ambivalent creature. The animal is portrayed as a threat that must literally be "stripped of its wild hair". The association of hair and fur with primal strength is universal and can also be found in the Bible. The bear in the feast that we witnessed is shaved by Rosetta and the hunter and, in this way, tamed and made manageable. Only then can he be accepted into the community. But at the same time, he is a force from the wilderness, penetrating the village and revitalising man and nature.

The theme of the bear kidnapping and "marrying" a woman is widespread in Europe and Eurasia and is certainly very old. According to Robert Bosch, there is a cultural layer recognisable throughout Europe in which fantasies about the power and fertility of the bear are elaborated in stories, rituals and cult objects, a theme we also find discussed in literature (Bosch 2013; see also Layoux 1996; Pastoureau 2011; cf. other papers in this volume). An echo of this can be found, for example, in the coats of arms of specific families. Place names are often linked to a story about the defeat by or the marriage to a bear, who in this way passes on its power to a city founder or a lineage group. For example, the *Gesta Danorum* by Saxo Grammaticus, the "Deeds of the Danes", dating to *c.* 1200, tell of

the Danish king, Sven II (1047–1076), who is said to be descended from a bear (his great-grandfather was said to be the son of a bear and a woman he abducted) and to have owed his great strength to it (Pastoureau 2011, 79). That this marriage option was taken seriously is shown in a remarkable writing by William of Auvergne, intellectual and bishop of Paris from 1228 to 1249. William relates the story of a woman who was abducted by a bear and had three hybrid sons. After seven years, the woman and her children were freed and reintegrated into society. The sons were even knighted. The only visible sign that their father was from the forest was their "abundant hairiness" (Pastoureau 2011, 77). Remarkably, the bishop acknowledges that the bear's sperm is "almost identical to human sperm, that bear and woman are interfertile, and that the offspring of their union are fully human" (ibid., 78). This is quite a different version than the romantic union between woman and bear in the well-known fairytale versions, from the Grimms' fairytales to Gabrielle-Suzanne Barbot's "The Beauty and the Beast", in which "the beast" always turns out to be an enchanted prince and not a real animal at all.

A marriage and/or family affiliation to impressive, dangerous (often man-eating) animals is not restricted to the bear. Other dangerous animals, such as the wolf and tiger, have their own characteristics but share their impressive power and their ability to kill. Can we understand the role of the bear in the European and Eurasian past and present better by a short detour that will allow us to see how other dangerous animals have been conceptualised?

Pacts with dangerous animals – tigers, wolves, bears

Because the bear is, in the European context, the animal that resembles humans the most, a marriage is perhaps imaginable. But marriages are also mentioned in myths concerning tigers and wolves. A Turkish legend, for example, tells of a young boy who survived a raid on his village. A she-wolf finds the injured child and nurses him back to health. He subsequently impregnates the wolf who then gives birth to ten half-wolf, half-human cubs. One of these, Ashina, becomes their leader and establishes the Ashina clan, which ruled the Göktürks (T'u-chueh) and other Turkish nomadic empires (Findley 2005, 38).

Further to the east, on the Indonesian island of Sumatra, the tiger is the central animal in mythology. It is also the most feared predator, entering villages and preying on cattle and sometimes people. This has not led to tiger hunts; on the contrary, until recently, local populations have declined to kill tigers for money. The reason is that the tiger is still revered as an ancestral being, an incarnation of an important ancestor and related to humans by marriage. In one myth, a Sumatran farmer's son marries a princess of the tiger clan. The members of this clan are living in a village in the jungle in the form of people, but outside of the village they turn into tigers. The marriage results in a separation, but also establishes a pact between the tiger people and humans. In this pact they agree to respect each other as family and not to bother each other "leaving the village to the people and the forest to the tigers" (Bakels 2004). People still refer to this pact when explaining why they do not fear tigers. There is, however, one exception to this non-violence pact. That is when a person trespasses the rules of behaviour. Only then will the tiger attack this person or their cattle. The opposite scenario is also important: Only a tiger that enters a village and kills can be killed, and it will then be buried with ritual ceremony.

Such a symbolic pact has many advantages. It transforms an uncontrollable natural force (a tiger attack) into controllable social behaviour (behaving according to the law). This can be advantageous to a society as a whole, where disruptive anti-social behaviour is sometimes difficult to correct. Last but not least, this pact protects the tiger in Indonesia to a certain extent. Interestingly enough, such pacts between man and dangerous animals also existed in Europe, probably on a much wider scale

than we realise. A famous example of such a pact is that between St Francis of Assisi and the wolf. According to the story, a wolf terrorised the people of Gubbio. Francis made a pact with the wolf, in which the wolf promised to refrain from eating cattle and humans, and the people of Gubbio promised to feed the animal daily. The scene was captured by the painter Sassetta around 1440; we see Francis writing down the appointments and the wolf watching patiently (Van Os et al. 2016).

But back to the bear! Interestingly, there are also some reminiscences of such a pact with the bear, where the animal seems to play a role as corrector of anti-social behaviour. For example, in the earlier-mentioned Khanty mythology and rituals connected to the dead bear, there is the idea that the soul of the slain bear "reports" to the bears in heaven about whether it has been treated properly. If so, bears will be reborn in the spring. R. M. Frank mentions a myth that speaks of a kind of pact in which a bear cub comes down from the sky, after agreeing not to harm people, or eat their food supplies. The cub is to teach humans how to carry out the bear feast. That pact, however, is between the bear cub and its bear mother or father dwelling in the sky (Frank 2015, and personal communication): It is not directly between bears and humans, although the cub is not summoned to hurt people, which is the key notion in the pact with the tiger and the wolf. One wonders what more rules of behaviour were possibly connected to this reporting to the bear in heaven. Could it be that, as came to the fore in the pact with the tiger, man and bear promised to respect each other's domains? Was there also once in Europe a "pact with the bear" – a tendency to kill only those bears who killed sheep or people? There are references to "unjustly killed" bears (Pastoureau 2011, 82), but more research is clearly needed.

A new narrative of people and bears

Meanwhile, our relationship with "the wild" has not become any easier. While bears have been reintroduced into the Pyrenees, and also into northern Italy in 1999, there has yet to be a well-understood "pact with the bear" in our contemporary relationship with these creatures. In 2006, it was the already-mentioned bear Bruno who, straying into Germany, was deemed too dangerous and therefore shot. In 2013, an "at risk" bear named M13 was shot in the Swiss canton of Graubünden. Although he was clumsy and not very shy, he had not yet done any real harm to anyone.

This raises questions, including our ability in Europe to coexist with such a potentially dangerous animal. For one thing, there seems to be an essential difference between the way Canadians and Americans react to "bears around the house" and the way Europeans react. The over-excited reporting of the bear Bruno's whereabouts, of what is in fact "business as usual" in the US and Canada, where people have frequently lived with bears and grown up with them, illustrates how we in Europe have lost contact with bears, and with the idea of co-existing with a dangerous animal.

In most European countries, the bear disappeared generations ago or has become very rare (cf. Zedrosser/Svensson, this volume). The bear is a stranger, we are no longer used to him, he is not part of our lives and we find even the smallest chance of unpleasant confrontations unacceptable. The question is whether we can change that basic attitude. Can we form a new relationship, a new pact with the bear? It is understandable but strange that other potential dangers for Europeans, such as an attack by a dog or a collision by a car, are acceptable to us, but a bear in our path is not.

Could we build a moral circle, a "circle of trust", a concept originally meant to indicate the group of people that you trust, but one that could be extended to animals, including the bear (cf. Wenz 1988)? How do we get the bear into this circle? Perhaps the old multi-layered relationships we had with the bear can inspire us to accept him once again as a harbinger and bringer of fertility, strength and happiness.

And the bear feasts? This kind of traditional feast and ritual performance have a layered and poetic power of expression. The feelings of belonging that the bear festival evokes is obvious, even to

us outsiders, and it seems to be the main reason the feast is performed. Young men and women come back to their home villages for the weekend, and they look forward to next year's festival as soon as it is over: It has become an identity symbol. Perhaps the bear festival is even more popular than ever. As the world grows larger, local – in this case Catalan – distinctiveness is more cherished.

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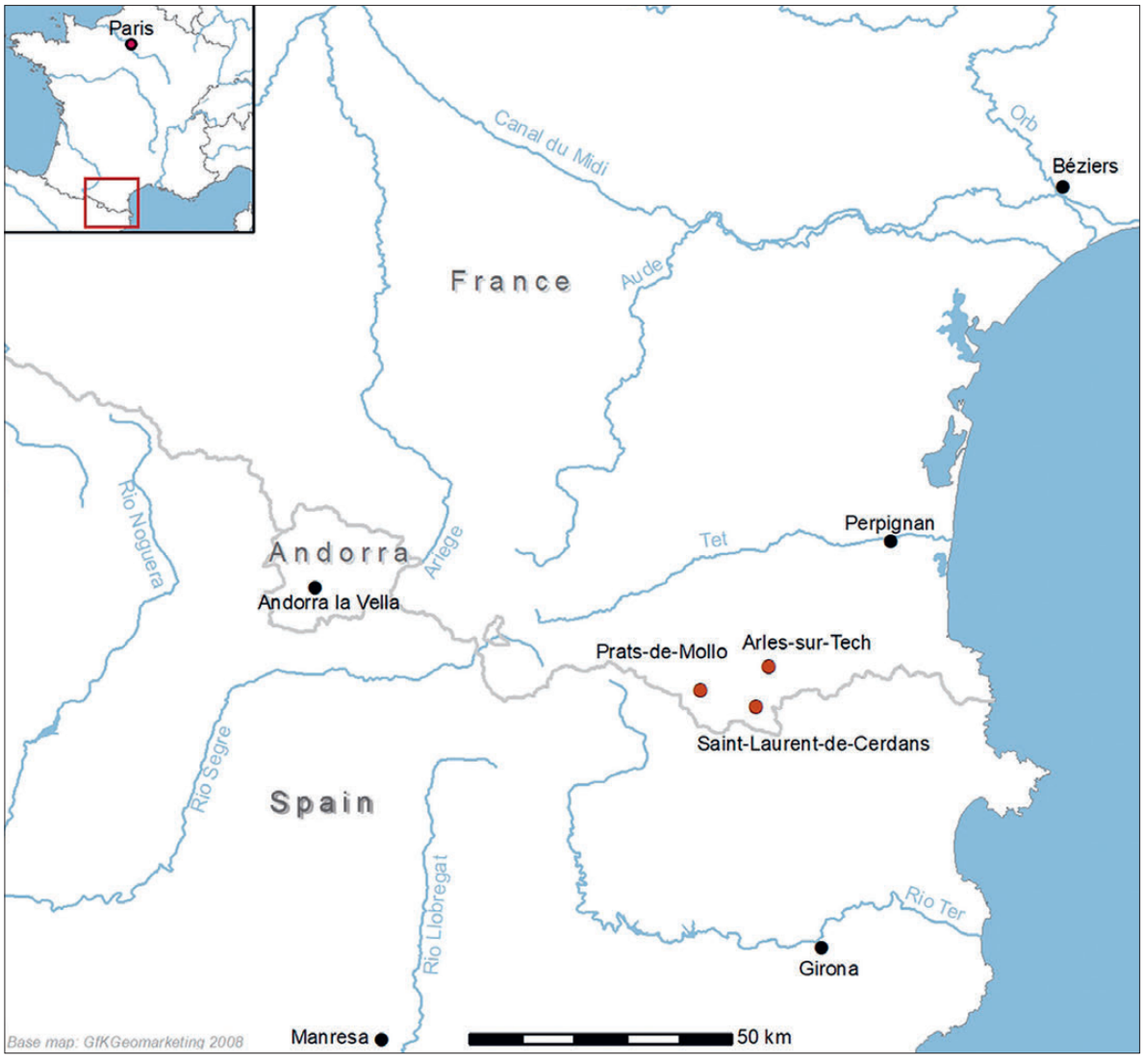


Fig. 1. Villages in the French Pyrenees in which bear festivals take place (map GIS department, ZBSA).



Fig. 2. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear is discovered in the forest (youth performance; photo J. Bakels/A. M. Boer).



Fig. 3. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear is taken to the village (youth performance; photo J. Bakels/A. M. Boer).



Fig. 4. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear, the hunter and Rosetta on a balcony (youth performance; photo J. Bakels/A. M. Boer).



Fig. 5. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: A recurring fight between the bear, the hunter and Rosetta (photo J. Bakels/A. M. Boer).



Fig. 6. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: A recurring fight between the bear, the hunter and Rosetta (photo J. Bakels/A. M. Boer).



Fig. 7. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear in his costume (photo J. Bakels/A. M. Boer).



Fig. 8. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear and green branches symbolising spring (photo J. Bakels/A. M. Boer).



Fig. 9. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear sits to be shaved (photo J. Bakels/A. M. Boer).



Fig. 10. Bear festival in 2016, Arles-sur-Tech, French Pyrenees: The bear and the hunter after the performance (photo J. Bakels/A. M. Boer).

What are those bears doing there? On a painting from early Italian art

For Penny

By Henk van Os

Keywords: Early Italian art (1250–1400), Dittico di Santa Chiara, *St Francis, stigmatisation, bears*

Abstract: The monumental Dittico di Santa Chiara, *which belongs to early Italian art (1250–1400), has seen a lot of discussions about its date and attribution. One part of it shows the culmination of the life of St Francis – his stigmatisation. Until now, however, one meaningful detail in this painting has been overlooked – two adult bears and a cub that is, as yet, a shapeless lump in the grotto. It was first mentioned by Ovid that the mother bear licks its young into bear-shape. In medieval times, this licking by the mother symbolised how Christ converted the gentiles.*

Over 50 years ago, the Pinacoteca Nazionale in Siena was the principal location for my research on early Italian art (1250–1400). It is the only museum that possesses a complete overview of two centuries of medieval painting. During this period, all of Europe spoke, according to Bruno Santi, of Sienese painting as *quella fascinosa miscela – insomma – di semplicità e di grandeur* – that fascinating mixture of simplicity and grandeur.

With the passage of time, very little has changed in the Pinacoteca, and it is very quiet there. The day-trippers come to see the town's Duomo and gather on the Campo, the scallop-shaped square that is still the focus of the city's civic pride. They rarely venture any further than that.

Almost every time I revisit the tranquil Pinacoteca, I discover something new in those paintings that I have known for so long. Five years ago, I had an experience like this almost at the moment I walked in the door. The second room contains a monumental diptych of St Clare of Assisi (the *Dittico di Santa Chiara*; Fig. 1) measuring about 120 x 170 cm, including a painting of the high point of the life of St Francis – his stigmatisation. Through the intensity of his prayers to the suffering Christ, he received the wounds of the crucified Saviour on his own body. Francis is depicted in a kneeling pose but, at the same time, he is "reaching up to the eternal Godhead", as mystics would put it.

There has been a great deal of art-historical discussion about the date and attribution of this work. Is it an early painting by the first great Sienese painter, Guido da Siena? Or was it painted by an assistant? As a result of this discussion, hardly anyone has ever given a thought to the two massive bears and the grotto containing a shapeless cub. The bears have taken the rugged forests of Mount La Verna in Tuscany as their corner of paradise. I had paid far too much attention to Francis and his prayers to realise just how remarkable those bears actually were. Realistic wild animals like this are nowhere to

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1159–1162 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134384

be seen in 13th-century Italian paintings. You might come across some little creature now and then, but these two stand out. Why are they there? I asked myself that question, but I found no satisfactory answer in art-historical literature.

However, medieval books on animals, bestiaries, give detailed descriptions of bears. They are portrayed as a terrifying menace, but also as lovable creatures. It is related there, too, that a new-born bear cub starts out as a shapeless lump. Only after his mother has licked it repeatedly does it assume the shape of a bear; the mother appears as a sculptor. This story was first told by Ovid in his Metamorphoses (chapter 15: 379–381). The authors of the medieval bestiaries often added the remark that this creative licking on the part of the mother symbolises how Christ converted the gentiles. After all, in the scholastic period everything in nature only assumed meaning after it had been Christianised.

It is very likely that this tale of the licking bear is being portrayed in the painting. Thus the symbolism of the bears would represent an iconographic theme that I, because they were "just bears", had tended to overlook – as had perhaps other spectators as well. Three bears are depicted: One of the adults is nibbling on the berries of a shrub, while the other fully-grown one witnesses the miracle of the stigmata, the most wondrous metamorphosis in Christendom. The third bear is that lump in the grotto. The mother still has a lot of work to do on it.

The most detailed description of the bears at Francis' stigmatisation dates, like the painting, from the end of the 13th century. Its title is "Reflections on the Stigmata" (anonymous). It is a sort of compilation of old stories about the miracle that Francis experienced. The first of the five reflections tells how Francis came to be on that high mountain.

At a reception in 1224, Francis met the immensely wealthy owner of Mount La Verna, Roland of Chiusi and Casentino. This man had heard of the remarkable hermit and offered him the mountain as a perfect location for prayer. It was too rugged for hunting, but for hermits it was ideal. Francis and two of his pious brothers would live in such proximity to the Creator that they could co-exist in peace with all earth's creatures. Francis accepted Roland's offer, and Roland then gave him and his two disciples 50 armed men to scout out a suitable location for their life of prayer. Fifty men! That shows how dangerous the wild animals were. And the most prominent of them all was, of course, the bear. But even if there were bears, snakes or wolves, that did not deter Francis and his companions from their intense devotion. During his prayers, he often gestured towards the heavens with his arms. He brought the sign of the cross to Jesus and prayed that he might be able to share Jesus' cross and suffering. One night it happened: He was united in prayer with Jesus. And the bears watched it happen.

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Fig. 1a. The Dittico di Santa Chiara. *Overall view (Pinacoteca Nazionale in Siena, Italy, © Bridgeman Images).*



Fig. 1b. The Dittico di Santa Chiara. *Detail: the stigmatisation of St Francis, with three bears being present (Pinacoteca Nazionale in Siena, Italy, © Bridgeman Images).*

Bear-human interactions: Archaeological and ethnographic investigations in North American indigenous cultures

By Kerry Hull

Keywords: Native Americans, bears, ceremonialism, bear costuming, shamanism

Abstract: Bears have held a special position in Native American societies for millennia. Archaeological and ethnographic data illuminate deep ideological connections to bears from at least 8000 BC. This study investigates early indigenous groups of North America such as the Adena, Hopewell, and Mississippian cultures (c. 800 BC – AD 1600) to assess the roles of bears in myth, ritual, and as markers of clan identity. Post-Conquest ethnographic sources offer a wealth of data showing the status of bears. In this study, bear paraphernalia such as claws, teeth, paws, bear skins, and bear headdresses are examined in various ritual contexts such as healing, dance, and shamanism. The ceremonialism associated with bear hunts, especially those involving bear costuming and tobacco rites, are also discussed as a means of understanding the complex mythological relationship between bears and humans.

Introduction

Various species of bears inhabit parts of North America, most commonly in Alaska and Canada. While regular bear-human contact is not common in most parts of the United States, their influence on indigenous cultures, past and present, has been profound. In this paper, I investigate the roles of bears throughout known history in the lives of Native American groups in North America. I draw upon archaeological and ethnographic data to contextualize the importance of different species of bears among numerous North American indigenous groups. I also look at bears in ceremonial contexts based on archaeological evidence, primarily in the form of bear skull rituals, bear costuming, and bear paraphernalia, such as bear teeth, claws, and paws. I also provide ample ethnographic data as possible lenses through which to interpret the use of these items in pre-Columbian societies of North America. Furthermore, I detail the unique status bears hold among Native American groups as semi-human, healers, and warriors.

In the context of the present volume, which focuses on bears in northern Europe, it is hoped that this study of bears in North America will provide a comparative discussion for readers since many of the traditions surrounding bears in Europe have close correlates in North America.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1163–1184 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134385

The bears of North America

Three bear species are found in North America – the American black bear (*Ursus americanus*), the grizzly or brown bear (*Ursus arctos*), and in the Artic regions the polar bear (*Ursus maritimus*).[1] During the 19th century, due to negative attitudes toward bears and hunting, bear populations of all species precipitously declined, resulting in a steep drop in the number of grizzlies in most of the United States as well as a decrease in black bears in the southern states (Miller 1990, 357). Today bear management efforts have led to a stability in bear populations (Jorgensen et al. 1978; Will 1980), principally between the 1980s and 2000s (Miller et al. 2011; Scheick/McCown 2014, 24). Current estimates place the number of grizzly bears in North America at between 52,000 and 63,000 (Peek et al. 1987, 160).

Before discussing the impact bears have had on traditional cultures in North America, it is important to understand that the historical range of North American bears was substantially larger than our current situation. Black bears, for example, traditionally covered most forested areas of North America and Mexico (Pelton et al. 1999; Lavivière 2001; Pelton 2003), but have lost 41 % of their historical range since the arrival of the Europeans (Laliberte/Ripple 2004, 126). Grizzly bears' populations also historically covered much larger areas of North America, from Canada into Mexico, but today have suffered a 55 % decrease in historical range since European contact (Laliberte/Ripple 2004, 126), primarily due to human interactions (Mattson/Merrill 2002).[2] The broad extent of bear populations throughout North America ensured human encounters and a place in human mythology for the bear. Hallowell's (1926) classic study *Bear Ceremonialism in the Northern Hemisphere* expertly described the ethnographic history of bear reverence throughout Eurasia and North America, even pointing out the surprising commonalities between these distant regions.[3]

Indigenous cultures and bears

Indigenous populations in North America have developed complex cultural connections to the bears. Early archaeological evidence indicates that some form of bear ceremonialism was in place during the early Archaic Period (8000–500 BC; Fig. 1; Table 1). One of the earlier bear artifacts found in North America in California was incorporated into that state's flag by 1846. In 1985, a graduate student excavating at the Allan O. Kelly Archaeological Dig (CA-SDI-9649) in San Diego County, California, found a chipped bear-shaped stone crescentic made of meta-volcanic rock, measuring 6.5 cm long x 3.1 cm wide (Fig. 2). It was associated with artifacts in an Dieguito EQ-early La Jollan transition period midden, which dates it between 7000–8000 years old (Koerper/Farmer 1987, 283) and suggests some form of bear reverence during the Archaic period.

Among the numerous archaeological cultures in North America (here defined as the United States [including Alaska] and Canada), three major cultures existed in the Eastern Woodlands and Southeastern cultural areas of what is now the eastern United States: 1) the Adena culture (1000–200 BC; Early Woodland Period), consisting of several hundred sites in the Ohio Valley and others in neighboring states; 2) the Hopewell culture (100 BC to AD 500; Middle Woodland Period), comprised of

1 This study will focus on the American black bear (*Ursus americanus*) and the grizzly or brown bear (*Ursus arctos*).

2 In 1975, grizzly bears were included as an endangered species in the Endangered Species Act (ESA; 16 U.S.C. 1531–1544).

3 Many have noted the similarities between Eurasian and North American traditions related to bears. For example, Frazer (1912, 224) wrote: "The reverence of hunters for the bear which they regularly kill and eat may thus be traced all along the northern region of the Old World, from Bering Strait to Lappland. It reappears in similar form in North America". For more on such areas of convergence, see Hallowell 1926, 21–22, 29–31. See also Labbé 1903, 231.

hundreds of autonomous villages, which extended from Lake Ontario down to Florida, with one of the larger populations in the Ohio region; and 3) the Mississippian culture (AD 800–1600), primarily located in the midwestern, eastern, and southeastern United States. All three cultures are commonly referred to as the "Mound Builders". Archaeological data from these cultures, particularly among surviving Hopewell artifacts, show that bears held a position of status in their society.

The artistic skill of these early cultures is on full display in many of the bear-related artifacts that have come down to us. For example, in 1915, an exceptionally beautiful mica (a silicate mineral from the southern Appalachian region) bear was discovered measuring 11.25 cm high and 16.06 cm wide (Fig. 3). The item belongs to the Hopewell culture, dating to 100 BC – AD 500, and was found during excavation in Tremper Mound in Rush Township, Scioto County, Ohio. Another highly artistic creation is a stone bear effigy discovered at the Middle Woodland (250 BC – AD 500) Hopewell site of White Oak Point in Minnesota that boasts copper inlays in its eyes (Fig. 4; cf. Mather 2019, 201–202 fig. 51). Bear effigies and bear effigy tools are also attested in Massachusetts, New Hampshire, and Connecticut (Willoughby 1935, 37, 166). However, it was the use of bear incisors and claws, both real and artificial, where creative expression truly met cultural saliency.

Bear teeth and claws

Without a doubt, the most commonly encountered bear artifacts at North American indigenous sites are teeth and claws. The ornamental use of bear canine teeth dates back to Late Archaic (3000–1000 BC) times and continued through Native American indigenous cultures (Berres et al. 2004, 17). Excavations at the Hopewell Mound Group of Ohio produced an abundance of grizzly and brown bear teeth in Hopewell burials. Among these bear teeth some were plated with copper (Mound 20; Moorehead 1922, 95) or inlaid with pearls[4] (Mound 25; ibid., 111), and various faux bear teeth were made out of copper (ibid., 126), wood (ibid., 128), deer antler (ibid., 159), and one possibly made from limestone (ibid., 156; Fig. 5a–d). Bear teeth are found at various sites throughout the Hopewell region (Greber 1979, 53; Tomak 1994, 38), with more than 1,000 known from Hopewell sites by the 1970s (Seeman 1979, 372). In some cases, meteoric iron is set into the canine tooth (e.g. Seip Mound 2; Prufer 1961, 342). Bear teeth were often made into necklaces (Fig. 6; Phelps/Burgess 1964, 199; Ireton 1982; Bertino 1994). Further north, the Central Esquimo used bear teeth as fishing lures (see Willoughby 1935, 49). Bear teeth and claws could also be indicators of clan society membership.

Bear claws, both artificial and natural, were included in numerous burials in the Hopewell culture. A bear effigy claw made of copper was discovered in the Hopewell Mound Group of Ohio (Fig. 7; Moorehead 1922, pl. LXIX). A number of copper claw replicas,[5] likely those of a bear, were found in Hopewell Mound City Group earthworks in southern Ohio dating to the Middle Woodland period (200 BC – AD 500; Fig. 8). Bear claw replicas were also produced from canal coal and mica. Abundant ethnographic data show that bear claws were often kept by hunters who killed a bear, and they were worn as ornamental jewelry for status and power. Among the East Cree, Skinner (1911, 69) notes: "If an Eastmain hunter is alone when he kills a bear, he cuts off the middle toe and claw of the right forefoot. Upon returning to camp he gives this token to the person who is to carry the body from the woods, usually his wife, if the hunter is married. This individual takes a companion and fetches the carcass." The claw is "wrapped in cloth, beaded or painted, or both, and kept as a memento of the occasion" (Skinner 1911, 69). Bear claws were commonly formed into necklaces,

4 Grizzly teeth inlaid with pearls may be import items from the Rockies (Prufer 1964, 93).
5 Ohio History Connection museums: HOCU-2781 and HOCU-2728.

which are often found around the chest region of Hopewell burials. Indeed, one of the most common uses of bear claws in North American indigenous traditions is making necklaces (cf. Sparkman 1908, 199; Fig. 9).

Bear claws could have pedestrian functions such as among the Chipewyan, where bear claws (*maskukásiyŭ*) were used as a form of dice play (Curtis 1928, 69), and among the Lenepe, where bear teeth were used for gaming and conjuring.[6] However, the dominant use was for ritual or spiritual purpose. Among various Northwest Coast groups bear claws could be worn as a type of crown by shamans (Shearar 2008, 20). In some cases, a single bear claw was woven into the hair as a token of power, such as Cheyenne dancers in the Medicine Lodge or Sun Dance ceremony (Grinnell 1923, 280). In the early 20th century in Montana, a famous Gros Ventre (also known as Atsina or A'aninin) chief named A-kich-kot-ope once killed a large number of Blackfeet. The Blackfeet were able to kill all of the Gros Ventre, except their chief, who disappeared into a bush, where he made grizzly bear noises. He taunted the Blackfeet by saying "My power is very great". When they finally killed him, they discovered he was a medicine man whose "power came from the grizzly bear". He was wearing a grizzly skin and a necklace of grizzly claws when they killed him (McClintock 1923, 107–108). In addition, they also found a grizzly claw in his hair – the source of his power. So afraid were they that A-kich-kot-ope's power might escape that they burned his body on the spot (McClintock 1910, 56).

The power of bears is often linked to their erratic and frenzied characteristics, their unpredictability. Shamans transforming into grizzlies "often become uncontrollable and frenzied while dancing, and are said to have short lives unless they cleanse themselves after such a seizure" (Wherry 1964, 80).[7] Bears are often associated with warriors because of their fierceness (Shearar 2008, 20), and because of their power and volatility.[8] Consequently, bear paraphernalia were often worn in battle. The Cheyenne would paint grizzly images on their war shields precisely because bears are courageous and hard to kill (Teit 1900, 249), and anyone who bore such a shield would share in those qualities (Grinnell 1923, 192). Bear paws painted on one's face symbolized strength among the Eastern Cree (Skinner 1911, 21–22). Bear claws, skins, teeth, and other body parts were worn in battle, and battle armor often depicted bears (Kennedy/Stevens 1972, 96). And when in battle, bear paraphernalia or icons also had protective powers (Rockwell 1991, 94).

Bear paws

Like the individual claws, bear paws were also considered items of great potency and so were used in ceremonial contexts (Sparkman 1908, 210; Kinietz/Raudot 1940, 159–160). Bear paws are attested as paraphernalia of North American shamans (Hallowell 1926, 78). Pomo shamans of San Felipe, California, who have as their guardian Bear, used bear paws to empower themselves to cure someone afflicted by witchcraft (White 1932, 47). The Navajo usually only hunt bear in order to get a paw to use in ceremonies, since the right and left front paw of a bear were required for the Navajo Male and Female Mountain Way Chant, a ceremony performed to help individuals with anxiety or antisocial issues (Hill 1938). In the early 20th century, during initiation ceremonies among Keres in New Mexico, the shamans gathered together holding the skin and claws from a bear's foreleg, and one by

6 For an example, see the Smithsonian Institute collection, USNM Number E6881-0.

7 Stories abound of individuals able to change themselves into bears (McClintock 1923, 230).

8 Indeed, the English word "berserk" comes from the Norse term *berserk* < Old Norse *berserkr* "raging warrior of superhuman strength", possibly further deriving from **ber-* "bear" and *serkr* "shirt". For a fuller discussion on the controversies surrounding this etymology, see Sundqvist, this volume.

one they arose to strike the young man with bear paws to help empower the youth (Curtis 1926, 91).[9] There is sometimes a prohibition against eating bear paws, especially for certain members of society. For instance, the Plains-Cree believe that children should never eat bear paws lest they become savage like the bear during their impressionable years (Skinner 1914, 510). In addition, women were not allowed to eat bear paws among the Eastern Cree (Skinner 1911, 69). Furthermore, bear paws could have an ornamental function as they did with the Pomo (Gifford/Kroeber 1937, 166). Among the Blackfoot of Montana, men who achieved a certain level of status in a tribe would wear a grizzly bear paw on a necklace – an object of considerable value in their culture. Indeed, the separation of the Kickapoo and the Shawnee of the Ohio Valley region was said to have been caused by a disagreement over a bear foot (Trowbridge 1938, 69).

Bear teeth, claws, and paws are, on the one hand, relics, mementos from a successful bear hunt. However, they also fit prominently into social systems of exchange, shamanistic ritual (including healing), and societal status. It is crucial to note that the teeth, claws, and paws are the most dangerous parts of the bear, which also helps to explain their value as objects of inherent power. In essence, their removal from the bear divests the bear of that power and imbues humans with it.

Bear masks and skull rites

Another form of appropriating bear attributes was through costuming (Fig. 10). Bear skins and bear masks were often used to imitate bears, usually in ritual contexts. Early examples of this type of behavior are attested in part in the archaeological record, but much more fully in ethnographic studies. Bear headdresses were used by the Hopewell, but no actual bear headgear has survived the ravages of time. Copper headdresses, however, have been found, such as one discovered in Hopewell Burial 11 in Hopewell Mound 25, which was first interpreted as avian by Shetrone (1926, 68–72; see Giles 2013, fig. 2.1). A more recent treatment of the object identified it as representing a two-headed raptor (Giles 2013). An even more elaborate copper bear headdress was unearthed in Mound 13 of the Mound City group made from copper sheets secured by rivets (Fig. 11; see Converse 1983, 21). Also, another copper headdress from Mound 25, Burial 4 of the Hopewell Group, Ross County, Ohio (archaeological site number 33-Ro-27), currently in the Ohio State Museum, includes a bear claw design (#13885; Fig. 12). And in some cases, actual bear skulls were used in ritual contexts. In Williams Cemetery, Wood County, Ohio, an extraordinary artifact was discovered – a bear skull that was modified to be used as a human mask. There were three pairs of holes drilled into the skull so that the bear skin could be attached (Berres et al. 2004, 15).

Bear costuming is a practice that is well attested in the archaeological record. For instance, a figurine fragment from the Hopewell Wenger #4 site in Illinois (150 BC – AD 350) depicts a man wearing what appears to be a full bear costume with his head covered by a bear headdress (Fig. 13; Koldehoff 2006). The Wray figurine, found in the Newark Earthworks, Licking Col, Ohio, in 1881, is an example of a complete individual wearing a bear costume (Fig. 14; Dragoo/Wray 1964). This figure is of a man, possibly a shaman, holding a detached human head (possibly a "trophy") in his right hand. The man is wearing a bear skin with an attached bear headdress and bear claws hanging by his hands. Although we lack context, it is possible that this figurine represents a bear shaman involved in a transformation or some other type of ritual (cf. Romain 2009, 39–42).

9 According to many North American traditions, bear paws also have secretive powers for bears themselves as it is thought that bears sustain themselves during hibernation by sucking on their paws (Hallowell 1926, 27–29).

Ethnographic data also point to bear costuming as a prominent part of North American tribe ceremonialism. Blackfoot dancers in Montana would don a bear headdress that had two bear claws on it like horns (McClintock 1923, 288). The Brave Dog clan members associated with bears would also wear a bear headdress, patches of bear skin on their arms with bear claws attached by the hands, the faces painted to resemble that of a bear, the lower part of their bodies being naked (Fig. 15; McClintock 1923, 285). A bear skin costume and bear mask similar to the Wray figurine were also used by the Lenape in performances in which one was said to become "imbued with the spirit" of the bear once the mask was put on (Harrington 1913, 45).

Bear costuming and masking were likewise a key component of bear hunts. Before setting out, it was common among many North American tribes to participate in a bear dance in order to assure a successful hunt. In the mid-1800s, Domenech (1862, 445–446) described the pre-hunt bear dance among the Natchez as an appeal to "le génie des ours" that the hunt would be productive. The Medicine Man would lead the ceremony while dressed entirely in a bear skin and wearing the head of a bear to mask his face. All the dancers are similarly dressed as they imitate the movements of a bear while dancing in a circle.

While bear heads covered with natural fur were commonly in pre-hunt masking ceremonies, bear mandibles and full skulls were also powerful ritual items post-hunt. There is evidence of bear skulls as trophies at Tremper Mound, one of the earliest Hopewell sites in Ohio (Seeman 1977; 1979, 570). After a successful bear hunt, bear skulls were cleaned, dried, and often painted before being set in a specific place, commonly hung in a tree (Skinner 1911, 70). The Montagnais (Innu) of Canada would place the head of the killed bear on a pole in the very spot where it was killed as a "trophée" to showcase their successful hunt (Perrot 1864, 200–201). According to Hallowell (1926, 135): "In by far the majority of the tribes studied in northern North America and Siberia as well, a special emphasis is placed upon the preservation of the bear's skull, which is usually placed upon the branch of a tree in the woods, on a pole in some instances, or deposited in an ostensibly sacred place in the forest, sometimes along with the skulls of other animals." After killing a bear, the Timagami Ojibwe would hold a bear feast. The skull of the bear which has been painted with black stripes is presented to the most venerable in the group. The skull is then attached to the lower jawbone and placed on a tree branch facing a prominent point in the landscape, thereby marking it as a place where a bear feast had taken place (Speck 1915, 25–26).[10] In other cases, bear skulls were placed on wooden poles[11] "to appease the spirit of this important animal"[12] (Strong 1930, 5) among the Labrador. Among the Cree, decorated bear skulls were attached to upright, 4.5 m high poles in a line, all facing the rising sun (Flannery/Chambers 1985, 10). In some cases, the display of a bear skull could also have an apotropaic function in society; the Kutenai would place a bear skull on an altar and offer up prayers to stop grizzly attacks on their people (Curtis 1911, 140–1).

One particular ritual involving bear skulls is worthy of a more detailed examination, that of tobacco offerings that are literally "introduced" into recently killed bears using pipes.

10 The Liuseno would instead erect a stone where a bear was killed (Sparkman 1908, 199).

11 Similar rites are found among the Ainu of Japan. On the first day of the bear ceremony, a bear cub was killed. On the second day, the bear skull was cleaned and decorated before being placed on a forked pole, whereupon prayers were offered. It was then turned toward the east, the direction of its destination, *Kamui-moshir*, the supernatural place where gods and the dead live (Yamada 2018, 39–41). For related practices in Eurasia, see Germonpré/Hämäläinen 2007.

12 Likewise after the dance and successfully killing a bear, the Natchez "prie le génie de l'animal de ne pas se fâcher et de ne pas lui être contrair dans une autre expédition" ("pray to the spirit of the animal to not become angry and to not work against him in another expedition"; Domenech 1862, 445–446).

In order to properly contextualize the use of pipes in bear-related ceremonies, a brief discussion of tobacco pipes in ancient North American indigenous traditions is necessary. Adena, Hopewell, and Mississippian cultures all participated in the production of effigy pipes. Pipes from the Adena culture have been found at the Eva Site that date to *c.* 2000 BC (Lewis/Lewis 1961, 66). Among the Hopewell, the two primary sites where effigy pipes have been recovered are Mound City, Ohio, where a large number of stone pipes were found in Mound 8 during the mid-1800s, and Tremper Mound, Ohio, where 136 pipes of various types were discovered in 1915. These stone pipes were commonly made in the shape of humans or various animals, such as raccoons, dogs, porcupines, minks, mountain lions, numerous types of birds, and beavers (Townsend 1954). A number of bear effigy pipes have also been discovered, such as one found in Tremper Mound (A 125/000028; Fig. 16). Effigy pipes were also ubiquitous throughout the later Mississippian culture (see Steponaitis et al. 2019). Pipes resembling those of the Mississippian culture were still being made by the Cherokee into the 19th century (Brown 1926, fig. 231).

Adena, Hopewell, and Mississippian cultures' pipes were often made of pipestone. Pipestone, which was commonly extracted from quarries near the Scioto Valley, Ohio,[13] refers to "claystones and massive, fine-grained, carvable metamorphic rocks" (Hughes et al. 1998, 711). Catlin (1841, 234) notes from his extensive experience in the early 1800s among Native American peoples that some of their pipes were made of "pipe-stone". He states that the quarry from which the stone was taken was "a place of such vast importance to the Indians – as given to them by the Great Spirit, for their pipes" and that this stone was "strictly forbidden to be used for anything else". Catlin also illustrated a wooden pipe with a bear carved near the bowl (Fig. 17; Catlin 1841).

Stone pipes seem to be ritual items that were not made for daily use.[14] A ceremonial function for pipes may be evident from an early example of a bear feast at the early Late Woodland (AD 1000–1300) Carpenter Brook site in Onondaga County, New York, which was part of the Mississippian culture.[15] Excavations by Ritchie in the 1940s produced bones from at least seven individual black bears together with a smoking pipe and a clay phallic effigy pipe (Ritchie 1947; 1965). The presence of the pipes buried with the bear remains suggests the pipes served a purpose in the bear feast ritual, something that can be confirmed through numerous North American tribal traditions. For example, during a bear feast following a successful hunt, Hallowell (1926, 64) notes this tradition of the Cree of Labrador: "In cases where there are several hunters together and a bear is killed, it is customary for them all to sit down around the carcass after the beast has been slain. The oldest man in the group then makes a bark pipe, smokes a while and blows a few puffs into the air before they proceed to eat the bear. The improvised pipe is then thrown away." Among the Eastern Cree, after a bear has been killed, the hunters place tobacco in the bear's mouth and then they smoke pipes over the bear (Skinner 1911, 69). The Cree of Moose Fort have a different procedure. They cut off the bear's head, and then a "large stone pipe was laid beside the head and a plug of tobacco placed upon it". The men around the bear then smoked the pipe, each with a single puff, before all taking one bite out of the head meat (Skinner 1911, 71).

Similar to the East Cree and the Cree of Moose Fort, the Plains-Cree perform a related tobacco ceremony. After killing a bear, the Plains-Cree would choose a worthy elderly man and give him a

13 Emerson et al. (2013) have recently shown that Hopewell Tremper Mound pipe raw-material came from Illinois and Minnesota, but that later Mound City cache pipes came almost exclusively from local limestone and pipestone.

14 Hopewell pipes sometimes show evidence of deliberate breaking, presumably to ritually "kill" the spirit contained in them (Gehlbach 2006).

15 Berres et al. (2004, 11) date this assemblage to *c.* AD 1000–1300.

large stone pipe with tobacco. He would smoke it and say a prayer to the gods that the bear was not killed for sport but for food (Skinner 1914, 510). In other cases, a pipe is given directly to the bear while invoking a prayer of good will for the slain bear (Skinner 1914, 514). A Cree hunter would sit by the recently killed bear and say: "Black Food, do not be angry. Do not let the other bear spirit be angry... When you go back to *Memekwesiw*,[16] tell him how I have treated you" (Rockwell 1991, 36). Among the neighboring Ungava of the Labrador region, hunters would also stick the pipe into the mouth of the bear and say: "My grandfather, I will light your pipe" (Hallowell 1926, 64). Carr et al. (2008, 516) note a related tradition in which pipes could be used to "blow into the nostrils of a killed bear to appease it". In the 1760s, Alexander Henry witnessed a similar use of pipes after killing a grizzly: "The pipes were now lit; and Wawatam blew tobacco smoke into the nostrils of the bear, telling me to do the same, and thus appease the anger of the bear on account of my having killed her" (Quaife 1921, 139–140). In this context, pipes were a mechanism for making a final offering[17] of tobacco to (and *into*) the bear so that other bears would not hold a grudge against the hunter.

During Vicomte de Chateaubriand's travels to America in 1791, he witnessed a bear hunt among the Natchez. He records that after killing the bear, the hunter "lights his pipe, puts the bowl [of the pipe] into the bear's mouth, and, blowing down the tube, fills the throat of the animal with smoke".[18] The hunter then implores the spirit of the bear not to try to thwart any future hunting expeditions (Vicomte de Chateaubriand 1928).[19] The use of stone pipes in close connection with bear rituals and bear feasts from these ethnographic sources strongly suggests a direct link to the pre-Columbian assemblage of bear bones and ceramic pipes at the Carpenter Brook site discussed above (cf. Ritchie 1947; 1965).

The connection between tobacco offerings and pipes to bears in North American indigenous traditions is multi-layered, beyond bear hunting rituals. Wooden pipes are also imbued with power in other bear-related contexts. Among the Blackfeet, medicine pipes were particularly potent objects. During a ceremony to transfer the Medicine Pipe from one person to another,[20] members of the Society don bear skins, chant bear songs, hold up bear paws, make lumbering movements like a bear, and carefully shake the pipe "in imitation of a bear" (McClintock 1910, 262–264). "Of all the Blackfeet medicines," states McClintock (1910, 267), "the pipe is believed to have the greatest power, but it also brings the greatest burden". In the pipe itself resided the power of the bear (McClintock 1923, 290). He also notes that the "word 'bear' must never be named before the Pipe, lest it cause bad dreams and bring sickness upon your family – the word 'badger' should always be used instead. The Evil Power in such a violation may be averted by burning sweet pine as incense" (McClintock 1910, 267–268; 1923, 296). The pipe could only be brought into the presence of a bear skin with great care, being cautious to use the word "badger" instead of "bear" (McClintock 1923, 423), always being held with two hands "just as the bear does" (McClintock 1910, 269). During the dance that preceded the transference of the Medicine Pipe, the chief, while dressed in bear costuming, would imitate a bear in dance, moving back and forth, breathing hard, and digging in the ground as if he were looking for insects (McClintock 1923, 295).

16 *Meme:kwe:ši:w* is the being who presides over "clawed" animals on earth. See Flannery/Chambers 1985.

17 If an offering is not made to the killed bear, the Ojibwa say that the hunter "will be punished supernaturally for he will meet a bear who will maul him or kill him in revenge" (Landes 1937, 137).

18 In a later retelling of the event in French, Vicomte de Chateaubriand simply says "il allume sa pipe, la met dans la geule de l'ours" ("he lights his pipe, he places it in the mouth of the bear") without a mention of the bowl of the pipe (Vicomte de Chateaubriand 1857, 148).

19 He then cuts out the string of the bear's tongue, which will be burned back in the village, and depending on how it crackles, it indicates whether the spirit of the bear is appeased or not (Vicomte de Chateaubriand 1928).

20 The Blackfoot Medicine Pipe is said to represent the authority to conduct all such rites (McClintock 1910, 160).

It is clear, therefore, that bears and tobacco/pipes have a deep and abiding connection in North American indigenous societies. In both hunting and non-hunting contexts tobacco was a ritual offering par excellence for bears, and pipes were an essential ritual instrument used to carry that offering to the bear.

Bear-human: A near approximation

"Bears are like people except they can't make fire," state the Yavapai of Arizona (Gifford 1933, 241). The belief that bears and humans are closely related pervades North American indigenous traditions. They are omnivorous, cohabit areas with humans, and stand up on their two hind legs like humans. The Cree of eastern California summarize the complex nature of bears by saying a bear is "a furry person, a relative, that goes underground when the earth sleeps and emerges when it awakes" (Wright 2013, 55). Landes (1968, 27) similarly notes that among the Chippewa bears were thought to be "quasi-human, in anatomy, erect carriage, cradling of young with the forearms, enjoyment of sweets and liquors, manner of drinking liquid, shows of intelligence, [and] inclination to moderate behavior despite great physical strength". Bears, especially when skinned, are said to strongly resemble human beings. Sometimes humans are said to have been born of bears. Franz Boas noted that the Nlaka'pamux of south central British Columbia believe that twins are the children of grizzly bears (Rohner 1969, 203). There are documented cases of women breastfeeding bear cubs as if they were their own (Schaeffer 1966, 16). Indeed, bears are often referred to with human kinship terms throughout North America and Eurasia, especially during bear hunts.[21] A common label of affinity is "great-grandfather",[22] "grandmother"/"grandfather",[23] or "old man".[24] In the mid-1700s, Alexander Henry experienced the heartfelt reaction of an Ojibwa named Wawatam Ojibwa to his killing of a grizzly bear. "The bear being dead, all my assistants approached, and all […] took her head in their hands, stroking and kissing it several times; begging a thousand pardons for taking away her life: calling her their relation and grandmother; and requesting her not to lay the fault upon them, since it was truly an Englishman that had put her to death" (Quaife 1921, 139). In these traditions, bears are viewed relatives to humans, and their killing, while sometimes deemed necessary, is always a solemn experience.

"Bear doctors": Shamanistic traditions

One particular class of shamans, especially in California, is known as "bear doctors".[25] Of these bear shamans Kroeber (1907, 331) explained: "A special class of shamans found to a greater or less extent among probably all the Central tribes, though they are wanting both in the Northwest and the South, are the so-called bear doctors, shamans who have received power from grizzly bears, often by being taken into the abode of these animals – which appear there in human form –, and who after their

21 The Eastern Cree say that bears can understand everything said to them (Skinner 1911, 73), so using alternate names for them is a hunting strategy. For a full discussion of this phenomenon both in Eurasia and North America, see Hallowell 1926.

22 For this term among the Luiseno, see Gifford 1916, 209.

23 Such as among the Montagnuis-Naskapi. See Hallowell 1926, 44. Also, to a rattlesnake or a bear, a Pomo shaman will say: "Grandfather, I am not going to bother you. Let me go by safely." See Gifford/Kroeber (1937, 202).

24 For the use of this term among the Sauk, see Skinner 1923, 21.

25 The term *Gauk burakal* among the Pomo of California means "bear doctors", but translates literally as "human bear" (Lyon 1996, 86–87).

return to mankind possess many of the qualities of the grizzly bear, especially his apparent invulnerability to fatal attack. The bear shamans can not only assume the form of bears, as they do in order to inflict vengeance on their enemies, but it is believed that they can be killed an indefinite number of times when in this form and each time return to life."

Kroeber (1925, 259) notes that "bear doctors" do not attribute their magical powers to having the bear as one's guardian spirit,[26] but rather by the sheer possession of the bear paraphernalia. "In short," writes Kroeber (1925, 259), "he was the possessor of a fetish that increased his strength and endurance, and not a shaman at all, if the native information available may be relied on [...] There can thus be no doubt that the basis of the belief throughout California is shamanistic, and that the bear doctor falls into a class with the malignant shaman or evil witch."[27] Bear doctors can be male or female, but they must have a female assistant who aids with details such as sewing the doctor's all-important bear suit, known as a *gawī*, from a grizzly-bear skin, which imbued the wearer "with rapidity of motion and great endurance" (Barrett 1917, 452–456, 464). Pomo bear doctors had secret hiding places, such as a cave, where they were instructed in the ritual songs and how to use ritual paraphernalia (Lyon 1996, 86–87). They also work only at night under the cover of darkness, since they are then safe from hunters, and if any light from the moon appeared, they would immediately cease working (Barrett 1917, note 6).

The Pomo also believe that bears can appear in dreams to instruct someone (often a bear doctor) how to commit murder. The person appearing in the dream has a body part of a bear, which gives him power "to make [the person] a bear", so that they can kill another – a process known as "bearwalking" (Dorson 1952, 34). De Laguna (1987, 88) notes that this type of "Bear-walking" was practiced by "bad doctors" (i.e. shamans).

While Pomo and Yuki bear doctors do not heal, but rather are often menacing, in other North American indigenous groups bear doctors are expressly linked to curation,[28] as are certain bear societies.[29] Healing bear doctors dressed in bear skins would wear bear claw accoutrements, and often live and act like bears in order to solidify their power through mimicry. Early explorers often expressed amazement (and, at times, ridicule) at the bear doctors' costuming. George Catlin, an American artist who documented various Native American cultures, illustrated (Fig. 18) and wrote a description of a bear shaman summoned to perform a healing rite (Catlin 1841, 38): "His entrée and his garb were somewhat thus […] he approached the ring with his body in a crouching position, with a slow and tilting step; his body and head were entirely covered with the skin of a yellow bear, the head of which (his own head being inside of it) served as a mask; the huge claws of which also, were dangling on his wrists and ancles; in one hand he shook a frightful rattle, and in the other brandished his medicine spear or magic wand; to the rattling din and discord of all of which, he added the wild and startling jumps and yelps of the Indian, and the horrid and appalling grunts, and snarls, and growls of the grizzly bear, in ejaculatory and guttural incantations to the Good and Bad Spirits, in behalf of his patient; who was rolling and groaning in the agonies of death, whilst he was dancing around him, jumping over him, and pawing him about, and rolling him in every direction."

26 Others beyond bear doctors can have bears as their guardian spirit. Women who have the black or brown bear as their guardian spirit become industrious, good mothers, and skilled housekeepers, whereas men become expert at hunting and show great endurance (Wherry 1964, 80).

27 Ratzel (1888, 99) notes that in California there were "Algunos impios wintunes se convertieron en osos grises, animales à quienes se tiene por encarnación de todo lo mal" ("Some ungodly Wintuns turned into gray bears, animals who are considered to be the incarnation of all evil").

28 In Tekwa, the word *kieh* means both "bear" and "doctor," showing the intimate relationship between them (Wright 2013).

29 Among the Seneca, the Bear Society (*Nia'gwai'' oä''no'*) would meet to cure one of their members who was afflicted with an illness, such as a fever or rheumatism. The ceremony would begin by offering tobacco to the spirits of the bears, followed by various songs and a curative bear dance (Parker 1909, 177).

The reason for the elaborate costuming and behavior imitation of bears was meant to link the individual to the curative abilities of bears. Bears were commonly viewed as having secretive powers related to healing, such as the Zuni who saw bears as the preeminent curing animal (Stevenson 1904, 23). Likewise, for the Cheyenne, the bear is "a great medicine animal," who "possesses power – spiritual power," so that he can heal himself, and can heal other bears (Grinnell 1923, 105). Also, in the Great Plains region, prevailing mythology viewed bears as healers par excellence. The Lakota in North and South Dakota have bear doctors known as *mato wapiye*, who live and eat like bears. They usually perform healing ceremonies in darkened rooms. If medicinal herbs are needed for the ceremony, they dig them up as bears would, using bear claws (Lyon 1996, 166). Among the Teton Sioux, the elder Śiya´ka stated: "We consider the bear as chief of all the animals in regard to herb medicine, and therefore it is understood that if a man dreams of a bear he will be expert in the use of herbs for curing illness. The bear is regarded as an animal well acquainted with herbs because no other animal has such good claws for digging roots" (Densmore 1992, 195). In fact, Rockwell (1991, 76) suggests it is probably the fact that bears eat and gather plants and roots – the primary elements of medicine – that facilitated this association between bears and healing.

Conclusion

As semi-human, bears already hold a unique place among animals in indigenous North American thought. This study has described the ways in which bear ideology informs ritual, myth, and identity in these societies. Archaeological evidence indicates that some degree of bear ceremonialism, present from at least *c.* 8000 BC, and possibly several millennia earlier, existed in North America. Adena, Hopewell, and Mississippian cultures (*c.* 800 BC – AD 1600) incorporated bear paraphernalia and ideology into Clan divisions, healing rites, and mimetic dances. Post-Conquest ethnographic data provide a wealth of contextualization for many of the pre-Columbian artifacts related to bears. What becomes abundantly clear through all of these lines of evidence is that bears were revered for their near-humanness, their intimate knowledge and abilities in curing illness, and, perhaps most obviously, their power as apex land predator in North America.

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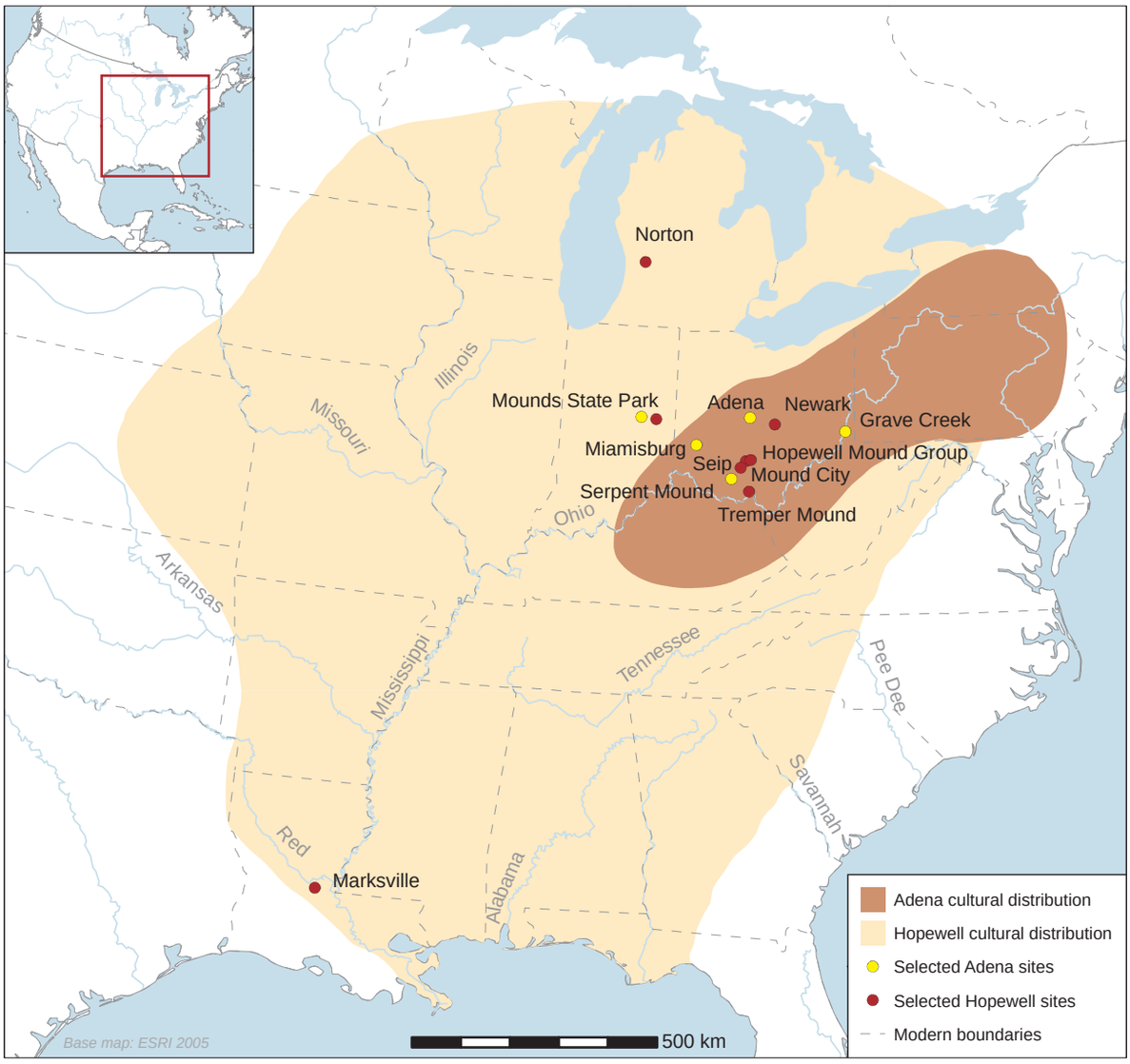


Fig. 1. Selected sites mentioned in the text (map GIS department, ZBSA).

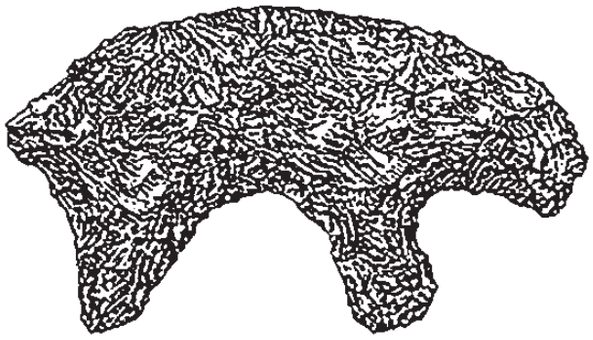


Fig. 2. Chipped bear-shaped stone crescentic, discovered at the Allan O. Kelly Archaeological Dig in San Diego County, California, dating to c. *8000–7000 BC (#CA-SDI-9649; after photo in* Koerper/Farmer *1987, fig. 1).*

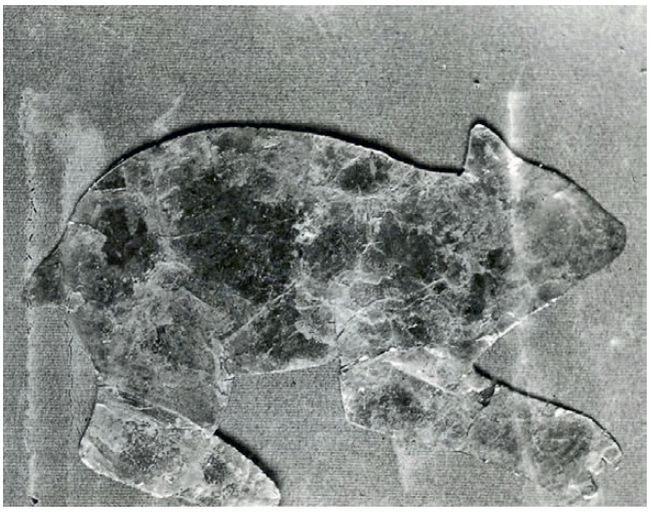


Fig. 3. Bear effigy made of mica, Hopewell Tremper Mound, Ohio (Ohio History Connection Archaeology Photograph Collection).



Fig. 4. Bear effigy discovered at the Hopewell Middle Woodlands (200 BC – AD 500) White Oaks Point site in Minnesota with copper inlays in its eyes (after Mather *2019, 201–202, fig. 51). Not to scale.*

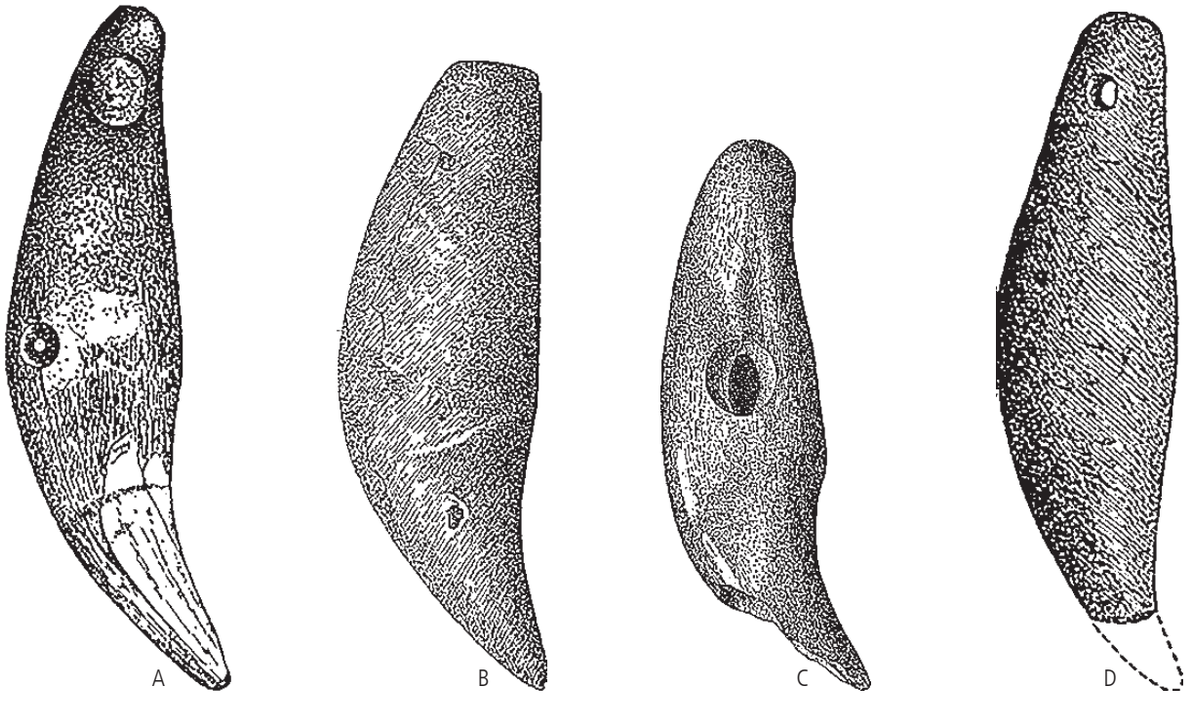


Fig. 5. Modified or artificial bear teeth from Mound 25 of Hopewell Mount, Ohio. a: Bear tooth inlaid with pearls (after Moorehead *1922, fig. 49, right); b: Faux bear tooth made of wood and covered in copper (after* Moorehead *1922, fig. 57); c: Faux bear tooth made of deer antler (after* Moorehead *1922, fig. 58); d: Faux bear tooth possibly made of limestone (after* Moorehead *1922, fig. 58). Not to scale.*

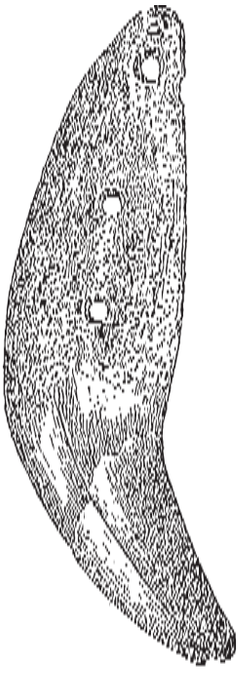


Fig. 6. Bear tooth likely used as a pendant during the Hopewell Middle Woodlands period (200 BC – AD 500; after Moorehead *1922, fig. 48).*



Fig. 7. A bear effigy paw made of copper, discovered in the Hopewell Mound Group of Ohio (after Moorehead *1922, pl. LXIX).*



Fig. 8. Copper claw replicas, likely of a bear, found in the Hopewell Mound City Group earthworks in southern Ohio, dating to the Middle Woodland period (200 BC – AD 500; photo courtesy of Ohio History Connection, HOCU-2781, HOCU-2728, HOCU-2734, HOCU-2736).



Fig. 9. Bear claw necklace of the Nez Perce of northern central Idaho (c. 1900; photo courtesy of Nez Perce National Historical Park).



Fig. 10. A Qagyuhl man in full bear costuming (photo E. S. Curtis, 1914, courtesy of Charles Deering McCormick Library of Special Collections, Northwestern University Libraries. "Náne – Qágyuhl", Edward S. Curtis's The North American Indian. Accessed Wed Nov 02, 2022. https://dc.library.northwestern.edu/items/13038d9c-1fff-40c5-9502-3a847a7d2e42).

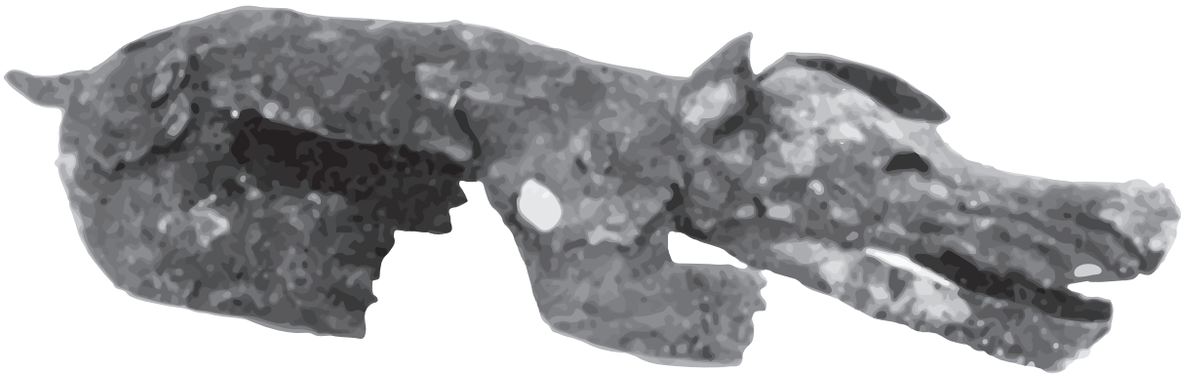


Fig. 11. Hopewell Copper bear effigy headdress from Burial 3, Mound 13, at the Mound City Group, Ohio, dating to 100 BC – AD 500 (after Mills 1922, 413, fig. 38; graphically reworked by M. Bolte, ZBSA).



Fig. 12. Copper headdress from Mound 25, burial 4, of the Hopewell Group, Ross County, Ohio, with bear-claw design (Ohio State Museum, #33-Ro-27; photo K. Hull; graphically reworked by M. Bolte, ZBSA).

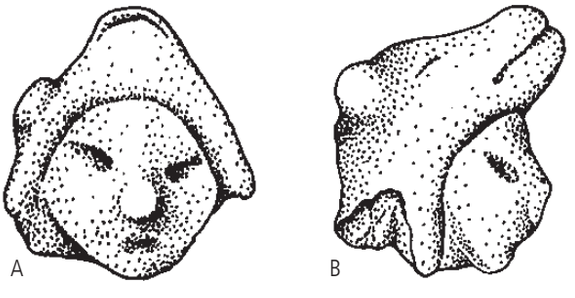


Fig. 13a–b. Fragment of a figurine from the Hopewell (100 BC – AD 500) Wenger #4 site in Illinois, wearing a full bear costume with the head covered by a bear headdress (after Koldehoff 2006, fig. 2, used with permission from author).



Fig. 14. a: The Wray figurine showing a possible shaman wearing a bear costume, found in the Hopewell (100 BC – AD 500) Newark Earthworks, Licking Col, Ohio; b: Upside down view of severed human head in lap of Wray figurine (drawing A. C. Lange, after a template).



Fig. 15. Blackfoot Brave Dog clan members, one with a bear claw necklace (after McClintock 1923, 285).



Fig. 16. Bear effigy pipe discovered in Hopewell Tremper Mound in Ohio (100 BC – AD 500; A 125/000028; courtesy of the Ohio History Connection).

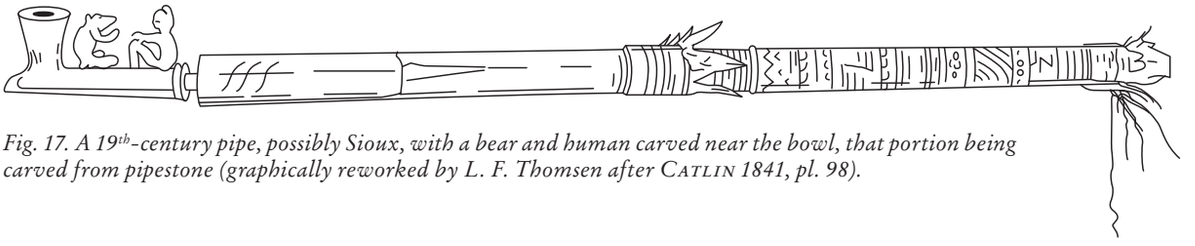


Fig. 17. A 19th-century pipe, possibly Sioux, with a bear and human carved near the bowl, that portion being carved from pipestone (graphically reworked by L. F. Thomsen after Catlin 1841, pl. 98).



Fig. 18. Illustrations of a 19th-century Blackfoot bear shaman during a healing rite (after Catlin 1841, pl. 19).

Table 1. Major cultural periods in North America.

Paleoindian	16000–8000 BC
Archaic period	8000–500 BC
Woodland period	500 BC – AD 1100
Mississippian period	1100–1541
Proto-historic period	1450–1750
Historic period	1542 – present

Bears in the starry sky

By Ernst Künzl

Keywords: Circumpolar constellations, the Great Bear, the Little Bear, wain, Mesopotamia, Homer, Greece, Germanic peoples

Abstract: Our names for the constellations of both hemispheres largely stem from ancient Greece. The Great Bear and the Little Bear belong to the circumpolar constellations that never set. The Great Bear's alternative appellation, the Wain, came from Mesopotamia and was known to the Greeks but never depicted by them. The prolific ancient literature is divided into "astrothetical" works (star catalogues) and "mythographical" works (the connection of the constellations to Greek myth). The two she-bears were associated with varying mythological conceptions, while transformation myths formed the background to many constellation names: Heroes, humans, and animals were transferred to the sky as stars by the gods (catasterism). The two she-bears were thus perceived as two wet nurses of Zeus, the king of the gods, on the island of Crete; other authors attempted to demonstrate a connection with Arcadia. The Germanic peoples again saw a wain in each of the two constellations, as it had formerly been the case in Mesopotamia.

In the far north of the northern hemisphere's starry sky stand the circumpolar constellations that never set, including the Great Bear (Ursa Major) and the Little Bear (Ursa Minor). These constellation names of ours can be directly traced back to those of Greek antiquity (Künzl 2018). In Greece and along the Greek Aegean coast of western Asia Minor, the Great Bear was known since Homer's Iliad, i.e. from *c.* 800 BC onwards.

Did Homer in his day come to know bears in western Asia Minor? Where around the Mediterranean Sea did bears live at the time? The answer is simple: almost everywhere. In our present-day sense, the brown bear (*Ursus arctos* L.) is perceived as an animal of the north, due to its occurrence in northern parts of Scandinavia and Russia. However, the bears in the mountains of south and southeast Europe remind us not to lose sight of Mediterranean geography: bears still live in the Carpathians, the Balkans, in Abruzzo, the Pyrenees, and in northwest Spain. In antiquity, conditions were yet different, with bears existing in the entire Mediterranean region, in Spain, Italy, Greece, and Asia Minor, but also in North Africa outside of Egypt (Toynbee 1983, 83–91; Bevan 1986; 1987; Hünemörder 2002). In the Roman arenas, bears had to fight with each other and against humans. Bear hunts were a royal topic of interest. Emperor Hadrian (AD 117–138) hunted bears in Greece (Toynbee 1983, 83) and Asia Minor; he killed a she-bear in Mysia in Anatolia, and on this site founded the city of Hadrianotherai ("Hadrian's kill"; *Historia Augusta*, Hadrian 20,13; Toynbee 1983, 83).

Depictions of bears are found everywhere in the Mediterranean area, albeit more from the Roman imperial period in the centuries following the birth of Christ than from the time before. The excellent bronze she-bear in Aachen cathedral came from Rome, where it had served as a fountain figure.

Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe, ed. by Oliver Grimm (Turnhout: Brepols, 2023), pp. 1185–1198 BREPOLS PUBLISHERS 10.1484.M.TANE-EB.5.134386

It was originally part of a Greek sculpture group of a hunting party of the 3rd century BC, and had probably come to Italy as part of the gigantic Roman art theft activities from the 3rd to the 1st centuries BC (Fig. 1; cf. Künzl 2003). Subsequently the bear goddess Artio from Muri near Bern, with her brown bear, stands out among the ancient bear depictions in a Roman work of the 2nd century AD (Fig. 2; cf. Bachofen 1863; 2020; Kaufmann-Heinimann 2002). In the Roman army of the imperial period, bears played an enduringly visible role; the standard bearers and signallers of the Roman legions (*signiferi*) primarily wore bear skins for deterrence, since their hands were not free to carry weapons (Künzl 2008, 23 figs. 31–32).

The Olympian gods of the Greeks had their corresponding animals, such as Zeus his eagle or Apollo a griffin. The animal goddess par excellence was Artemis, the Roman Diana. Her preferred, though not exclusive animal was the hind. One measure for the animal-deity relationships are the consecration figurines and sacrificial leftovers in Greek sanctuaries. Here, a differentiated picture emerges with respect to the bear. In the pre-Christian centuries, bears lived in Greece and Asia Minor, though they were still rare as a subject in religious ritual. Consecrations of bear depictions in Greek sanctuaries are scarce and limited to the goddess Artemis. Known as the Mistress of Animals (*Potnia Theron*), Artemis received such votive offerings in her temples on the island of Thasos, in Athens, and in the Peloponnese in particular (Argos, Tegea, Sparta; Bevan 1986, 338, 346; 1987). Arcadia in the Peloponnese is classic Greek bear country, which we will come back to with regard to the constellations. In the sanctuary of Artemis Brauronia in Brauron, Attica, the child-like ritual attendants were called *Arktoi* ("she-bears"; Bevan 1986, 18–19; Lohmann 1997).

Now these analyses concern a period partly far later than the first appearance of the she-bear as a constellation in the Homeric Iliad. What do we thus know about the two she-bears in the northern sky? Our knowledge rests on both archaeological evidence and ample ancient written sources. In Greek and Roman literature, two currents can be distinguished. The ancient scientific literature on the starry sky ("astrothetical" literature) often only casually takes note of the mythological explanation for the constellation names, focussing instead on star configurations. This literature encompasses the ancient fixed star catalogues: Eudoxus (4th century BC), Hipparchus (2nd century BC), the third book on astronomy by Hyginus (1st century BC – 1st century AD), and Claudius Ptolemy (2nd century AD).

The mythological tradition of ancient literature, on the other hand, primarily concerns itself with the explanation of the individual star sagas and constellations. This series in the first place includes Aratus (3rd century BC), followed by his Latin versions composed by Cicero (1st century BC), Germanicus (1st century AD), and Avienus (4th century AD). This is, however, only one branch within the field of mythological star sagas. Beside it, many Greek writers were involved with the composition of the mythological starry sky.

The ancient explanations of individual constellations could vary considerably, since different local traditions existed. Our naming sequence follows that of Claudius Ptolemy from the 2nd century, which had developed since late Hellenism and subsequently established itself in Ptolemy's version (Fig. 3; cf. Küentzle 1897; Gundel 1922; Boll/Gundel 1924–1937; Künzl 2005, 60–77; 2018). *Ptolemy* (*Geogr.* 1.22) calls a constellation an asterism, a "grouping of stars", signifying the charting and naming of the stars, i.e. an active process that ends with the appearance of a complete constellation. The term "catasterismi", introduced by Eratosthenes, designated the "placings among the stars", i.e. the placement of a being or object among the stars.

What do the stars in the sky say? There is the basic explanation that the stars represented an apotheosis, and that heroes such as Perseus, Heracles, and Orion lived on in the world of the stars as immortal beings, with the result, of course, that a codification of the myth, as it were, must be assumed: Perseus forever and ever fights the sea monster, and Andromeda forever and ever is chained to the rock. The other possibility is that the constellation names signified image denotations with a mythological or different background, which were then treated in an undogmatic manner.

Transformation (metamorphosis) and star apotheosis (placings among the stars; catasterism) were the categories concerning celestial processes when the constellations were named. Metamorphoses could be gruesome, as in the transformation of Princess Skylla into a multi-limbed monster while she was bathing in the sea (*Ovid*, *Metam.* 14,18–70). A divine metamorphosis could, however, also impart immortality in the sky, when the gods transferred a hero and his deed to the heavens, such as in the case of Perseus and Andromeda. These notions should not be interpreted too pedantically, since the monster (Cetus; Ketos) killed by Perseus likewise appears in the sky, and strictly speaking thus also became immortal (details in Boll/Gundel 1924–1937; Künzl 2018).

An important element of the Greek view of the sky was the indicated relationship and hence movement of the constellations with respect to each other (Hübner 2004). Orion seems to follow the Pleiades, and Boötes the two she-bears, while the sea monster Cetus looks up towards Andromeda in order to devour her (Hübner 2004, 155).

The Greeks closely observed the movement of the stars, since they were hoping for calendrical help with agriculture and seafaring. The orientation of sailors towards specific constellations is already described in Homer's Odyssey, while the connection between constellations and seafaring probably was a Minoan legacy (Wiesner 1968, 33).

With the Greeks, we come across constellations and star names already in their great early poetry, the epics of Homer and the didactic poems of Hesiod. The shield of Achilles, with its rich sculptural decoration, is described by Homer, including the view of the heavens (*Homer*, *Iliad* 18, 483–489):

> *Therein he wrought the earth, therein the heavens, therein the sea,*
> *and the unwearied sun, and the moon at the full,*
> *and therein all the constellations wherewith heaven is crowned —*
> *the Pleiades, and the Hyades and the mighty Orion,*
> *and the Bear, that men call also the Wain,*
> *that circleth ever in her place, and watcheth Orion,*
> *and alone hath no part in the baths of Ocean.*

The rim of the shield is entwined by the ocean, the centre features the star chart of the northern sky, which almost appears like a planisphere of later types; the image of the she-bear (Ursa Major; *Arktos Megale* in Greek), dominating the northern sky, as well as the two constellations of Taurus (Bull, represented by the Hyades and the Pleiades) and Orion (Fig. 4), are mentioned. Moreover, Homer is familiar with Boötes ("he who ploughs with oxen"; also called Arctophylax, "bear-keeper"; cf. Häbler 1897; Knaack 1897) and its brightest star, Arcturus. Homer has Calypso advise Odysseus to orient himself by Boötes, amongst others, during his voyage eastwards. Boötes thus already was an important seafaring mark at an early date (Wenskus 1990). Odysseus sails away from Calypso's island to the east, and is guided by the Pleiades, Boötes, and Ursa Major (*Homer*, *Odyssey* 5, 271–277):

> (...) *nor did sleep fall upon his eyelids,*
> *as he watched the Pleiads, and late-setting Bootes,*
> *and the Bear, which men also call the Wain,*
> *which ever circles where it is and watches Orion,*
> *and alone has no part in the baths of Ocean.*
> *For this star Calypso, the beautiful goddess,*
> *had bidden him to keep on the left hand as he sailed over the sea.*

The northern hemisphere, as well as correspondingly the southern one, has a zone of stars around its respective pole, which always remain visible. In the north, these so-called circumpolar constellations

that never set encompass the constellations Cassiopeia and Cepheus, as well as Draco (Dragon), the Little Bear (Ursa Minor), and the Great Bear (Ursa Major; Fig. 5). On the flat star charts, the planispheres, these circumpolar constellations occupy the centre of the depiction, which is arranged around the stellar north pole (Fig. 6). It is these constellations of the north that Homer refers to in his phrasing that the she-bear does not bathe in the ocean (*Homer*, *Odyssey* 5, 273–275), meaning that it never sets.

From among the circumpolar constellations, Homer was indeed only familiar with the Great Bear; he simply calls it the she-bear (*Arktos*). The Little Bear (Ursa Minor) was named only later. In antiquity, the definition of Ursa Minor was attributed to Thales of Miletus (6th century BC; Boll/Gundel 1924–1937, col. 869–870). With the appearance of the Little Bear, the Great Bear received its epithet ("great"). The alternative name for this constellation, the Wain, was already used by Homer, and his reference is incidentally the earliest instance for different appellations of one constellation. Another name, the Seven Sisters, was added, usually denoting the Pleiades but sometimes also the Great Bear (Scherer 1953, 138–139). Though the Great Bear (Ursa Major; Boll/Gundel 1924–1937, col. 873–881) was also called a wain in literary terms, the wain does not appear in Roman depictions (and therefore presumably also did not in the lost Greek illustrations).

The Wain as a constellation was a creation of the Mesopotamian astronomers in Babylon (Jeremias 1913, 33, 126, 128, 292; on the constellations of the Babylonians in general, see Jeremias 1909). The literary sources, mainly from the time of the Assyrian kings Assurnasirpal II (884–859 BC) and Assurbanipal (669–627 BC; cf. Jeremias 1913, 33), are chronologically so close to Homer's epics that a direct influence of the Babylonian constellation of the Wain on Homer can be assumed: "The she-bear, which some also call the Wain" thus would mean that the Babylonian astronomers named it the Wain. The beginnings of astronomy in Mesopotamia date back to the 2nd millennium BC (Hunger 1997).

From Mesopotamia came the conception of the zodiac, an approximately 50°-wide belt in the sky on which the seven planets – as known in antiquity – moved, including Mars, Mercury, Jupiter, Venus, Saturn, as well as the sun and the moon. The Greeks subsequently adopted the Mesopotamian zodiac, together with some constellations such as Scorpio, Sagittarius, and Capricorn. Others were invented by the Greeks in a new form (Gundel 1992, 12, 36, 153; Künzl 2005, 42–43).

The constellation of the Wain must have been popular in the Orient; in Assur, a building inscription of King Sennacherib (705–681 BC) calls one of the north-facing gates the "Gate of the Wain Constellation" (Jeremias 1913, 126). A depiction of the constellation of the Wain was recognised on a cylinder seal (Jeremias 1913, 292–293 fig. 193). The Wain as a constellation was also known in China. A Chinese relief from AD 147 shows a star deity seated in a wain (Jeremias 1909, col. 1489–1490 fig. 50; 1913, 128 fig. 107). The Plough or Big Dipper was, just as Orion, and Ursa Minor or the Little Dipper, perceived as a cluster of seven stars in Babylon, with Ursa Minor or the Little Dipper also being defined as a plough (Jeremias 1913, 128). The bear, however, remained unknown in the Mesopotamian sky.

The Romans were initially unfamiliar with either the bear or the wain, and instead called the Great Bear *Septentriones*, i.e. the Seven Threshing Oxen (Scherer 1953, 134–137) in the early period. When the Little Bear was subsequently recognised as its own constellation, this appellation was also transferred to it, and it became known as the Seven Little Threshing Oxen (*Septentriones Minores*; according to Varro; cf. Boll/Gundel 1924–1937, col. 870). The Little Bear (Ursa Minor; Boll/Gundel 1924–1937, col. 869–871) was called "dog's tail", too (*Canis cauda* [*Kynosura* in Greek]). The melange of terms for these two main constellations around the north pole becomes even more complex considering that the appellation of "wain" (*hamaxa* in Greek) was used for both the Great Bear and the Little Bear. Aratus (3rd century BC) calls them two she-bears, which frame the pole and jointly circle it, and therefore, they would also be called "wain" (*Aratus* 26–27). That the two she-bears are

running after each other while circling the pole is also shown in ancient and medieval depictions (cf. Figs. 5–6).

Celestial globes are among the most important archaeological documents. Some of them only depict the zodiac and therefore have limited informative value (Gundel 1992 *passim*; Künzl 2005 *passim*). Complete depictions of the constellations in both hemispheres are, by contrast, rare. The large celestial globe on the Farnese Atlas in Naples (marble, early imperial period; Thiele 1898) and the small celestial globe in Mainz (brass, AD 150–220; cf. Künzl 2005, 60–70) are outstanding examples (cf. Fig. 3).

The inverted depiction of the constellations on the celestial globes of antiquity is not an error; this was a specific view of the ancient conception of the globe (Künzl 2005, 65). The Roman-era celestial globes show the starry sky with the eye of an observer who was imagined to be at the centre of the globe's interior. The correct view of the vaulted sky was thought to be from the centre of the globe, as if the imaginary observer was a tiny being in the middle of the sphere and the starry sky ought to orient itself towards this viewer. Therefore, the constellations on the ancient globes appear inverted; on them, the Great Bear and Leo (Lion), for example, look to the left (cf. Fig. 4), while modern star charts correctly show them looking to the right (Fig. 7). The ancient celestial globes are viewed by us as if from the outside of the vaulted sky and onto the imaginary external skin of the starry sky. Nevertheless, modern decorative celestial globes are illogical on their part by applying the correctly orientated star charts from the outside on the spherical shape of a globe. The ancient idea of a celestial globe with a (theoretically) tiny observer in its interior was only realised by the modern planetarium in its own way (developed by Walther Bauersfeld, Jena, 1919–1926); in a projection planetarium, we can let a moving and correctly orientated vaulted sky pass by in front of our eyes.

Hyginus (2.2) comments on the Little Bear in as much detail as on the Great Bear. The women Helice (Gundel 1912) and Cynosura (Gundel 1924) were wet nurses of Zeus as a child on Crete, and were transferred to the sky as she-bears; Helice ("the revolving one") as the Great Bear and Cynosura ("dog's tail"; Stoll 1890–1897) as the Little Bear. These interpretations go back to Aratus and the historian Aglaosthenes of Naxos, while it was Aratus who drew up the subsequently definitive connection to Crete (Gundel 1912). Following a few discussions on the term of the wain, Hyginus also mentions the name Phoenice (i.e. the lady from Phoenicia) for the Little Bear, the purported reason being that the Phoenician seafarers liked to orient themselves by the constellation of Ursa Minor (*Hyginus* 2.2). For him, the wain-based variants were a purely inner-Greek discussion. He was already unfamiliar with the wain constellation's Babylonian predecessor.

Arcadia in the Peloponnese was a land of wild animals and gruesome myths. The versions of Ursa Major, Ursa Minor, Boötes, and Hercules (*Engonasin*) that are linked to Arcadia instead of Phoenicia and Crete, demonstrate the endeavour to create a local complex of myths with Arcadia as the centre in the sky (Fig. 8). The author of this version was an unknown Greek poet or scholar of Hellenism. This Arcadian version did not prevail in the long run, according to the evidence in the ancient written sources (Künzl 2018, 52–53). One of the main subjects here was the transformation of Princess Callisto of Arcadia, who was one of the many lovers of Zeus, into a she-bear (Boll/Gundel 1924–1937, col. 874–875).

Hyginus enumerates a series of mythical variants for his readers in the early Roman imperial period, which are to be linked with the two she-bears. The common denominator was the mountainous region of Arcadia in the Peloponnese in southern Greece. Werewolf stories likewise originated in the diverse myths surrounding King Lycaon of Arcadia; behind the name Lycaon is *lykos* (for "wolf" in Greek). According to *Hyginus* (2.1), the cruel King Lycaon had a daughter, Callisto, who loved to hunt and was loved by the goddess Artemis. Callisto was supposed to, and wanted to, remain chaste for the sake of Artemis but was impregnated by Zeus and, as a punishment, transformed into a she-bear by Artemis. As a she-bear, she gave birth to a son, Arcas. Zeus (in other sources Artemis)

transferred Callisto to the sky as the Great Bear, and likewise her son Arcas as Boötes (Arctophylax; for the Arcadian transformation myths in more detail, see also *Ovid*, *Metam*. 2, 405–507).

Other mythical versions include Zeus' jealous wife, Hera, in the events. Even for the reason why Ursa Major never set in the sky a story of jealousy among gods was invented: Tethys, goddess of the sea and wife of Oceanus, did not want to welcome the she-bear in her realm, meaning that it is not allowed to dive into the waters of the ocean and bathe therein: "[and the Bear, which] alone has no part in the baths of Ocean" (*Homer*, *Odyssey* 5, 274–275), the reason being that Tethys was Hera's wet nurse, and Hera had a grudge against Callisto as the lover of Zeus. This scholarly version, however, was presumably invented only in the Hellenistic period (Wagner 1895).

According to the historian Araithos of Tegea, Ursa Major was not Callisto ("the most beautiful") but Megisto ("the largest"), and likewise an Arcadian and a daughter of Ceteus, the son of King Lycaon. Ceteus was then purportedly transferred to the sky as the constellation of Engonasin (which is otherwise interpreted as Hercules). For Ursa Minor, the Little Bear, Aratus' interpretation led the way, who oriented himself by Aglaosthenes of Naxos (*Aratus* 35–37). He connects the two she-bears with the myth of Zeus on Crete; the two she-bears Helice ("the revolving one"; Ursa Major) and Cynosura ("dog's tail"; Ursa Minor; Stoll 1890–1897) took care of Zeus as a child on Crete as wet nurses in the cave at Mount Ida. Another version of the myth declared Ursa Minor the hunting dog of Callisto of Arcadia, which was transferred to the sky as a constellation together with its mistress. In the case of the constellation of Boötes ("ox-driver"), and under the name of Arctophylax ("bear-keeper"), the references to the she-bears (*Arktoi*; *Ursae*) had the most success in antiquity; this had to do with the name Arcturus, the brightest star in the constellation, and referred to the landscape of Arcadia in southern Greece and the myth of the Arcadian clan hero Arcas and his mother Callisto.

For the Greeks, the names for the constellation of Boötes alternated between the wain and the bear (cf. Fig. 4, above right). The older name Boötes ("ox-driver") still contains the reference to the oxen of the wain. Since it was the she-bears that prevailed as a definition in the northern sky, the name of Boötes has changed to Arctophylax (bear-keeper; *Aratus* 92) since the 3rd century BC, which then remained predominant in the Roman writings (Boll/Gundel 1924–1937, col. 886–887). Both Boötes and Arctophylax describe the relationships to the circumpolar constellations of the wain and the she-bear, respectively, in terms of views and gestures.

The starry sky of the Greeks dominated the ancient Roman period, too, and remains valid for us to this day. Other peoples, however, had their own astral systems. Unfortunately, nothing is known about the starry sky of the Celts, for example. This has to do with the fate of the druids. There was great respect for their intellectual achievements; they explored the stars and their movements, the size of the universe, natural science, and the power of the immortal gods, sharing their knowledge with the youth (*Caesar*, *Gallic War* VI 14). As the druids in Caesar's time, i.e. in the 2nd to 1st century BC, knew Greek and thus were capable of gaining access to Greek astronomy, specifics on the Celtic starry sky were to be expected. The Romans certainly ensured that in the hundred years between Caesar and emperor Nero, the caste of the druids as the intellectual elite of the Celts was eradicated; following the mass murder of druids by the Romans on the island of Mona (Anglesey) in the Irish Sea in the year 61 (*Tacitus*, *Ann.* XIV 29–30) there were no druids anymore. Their astronomical knowledge has since been lost.

It is likewise difficult to visualise the starry sky of the Germanic peoples. The ancient writers, including Tacitus with his *Germania* in particular, were either moralising ethnographers or primarily interested in military history. Germanic star names from the Migration Period and the time before Christianisation (in the north), therefore need to be retrojected from medieval sources, including all the uncertainties about the emergence of these individual names (Reuter 1934, celestial map fig. 83; Müller 1970, 133–134 fig. 72; on the Germanic star names, see Drews 1923, 89–126; Reuter 1934,

219–285; Scherer 1953, 129–131; Künzl 2018, 115–120). Any kind of "astrothetical" literature from the Germanic world is missing.

The Germanic pictorial records from the 3rd to the 8th century present a further problem. Many depictions are not easy to decipher, and as far as they can be interpreted, references to stars and constellations seem to be missing; this applies to the bracteates of the Migration Period as well as to the decorated weapons and the Gotlandic picture stones, with the exception of the two golden Gallehus horns from Jutland (Oxenstierna 1956; Brøndsted 1963, 324; Sommerfeld 2004, 86–87; Andersson 2008, 54), probably works of the Migration Period from the early 5th century. These contain reliefs of a pandemonium comprising warriors, combat scenes, animals, and mythical creatures. What is striking is the large number of stars as a filler motif in the background on one of the two golden horns. The obvious assumption has been that the animals and characters were linked to the Germanic starry sky of the 5th century (e.g. Betz 1927, 642–643), which cannot, however, be corroborated without utilisable written records (for a thesis on references to the solar eclipse of AD 413 and the lunar eclipse of AD 412, see Hartner 1969).

The most important sources continue to be written records. The methodological drawback is that these sources are spread across more than half a millennium, from the 8th to the 13th century, while some records date from an even later period. The published proposals should therefore be taken with a pinch of salt, and this also applies to the hypothetical drawing of the Germanic starry sky (Reuter 1934, fig. 83, and later Müller 1970, 134 fig. 71; critical of the hypotheses of Reuter 1934: Zinner 1935 *passim*; Bauer 1937, 47).

Examining some prominent constellations, we can already anticipate the outcome – bears are not to be found in them. The head of the bull, together with the Hyades and Aldebaran, in Taurus, was called *ulfs keptr* ("wolf's jaws"), according to an Old Icelandic source from the 13th century (gloss in the *Cod. 1812*, Reuter 1934, 274; Scherer 1953, 149). In Old Saxon glosses of the 8th and 9th centuries, the jostling boars appear as Orion's stars, which might have been a mix-up with the Pleiades (Steinmeyer/Sievers 1879, 496; 1882, 341; Reuter 1934, 273, 280; Scherer 1953, 148). On the other hand, the Pleiades are called the Seven Sisters; in Old High German glosses of the 9th century they appear under the names of *sibunstirri* and *sipunstirni* (Steinmeyer/Sievers 1882, 8; 1895, 606–607; Scherer 1953, 145).

The term "women's wain" (*kvennavagn*) for the Little Bear is rare and appears only once in an Old Icelandic source (*Cod. 1812*) in around 1250: "the bears that we call wain and women's wain" (translation after Reuter 1934, 249; Scherer 1953, 140). More numerous are the records for the Wain as the Great Bear (Reuter 1934, 183–184, 250–254; Drews 1923, 94). For Ursa Major, which already Homer knew as the Wain, the Wain dominates the scene, either simply as a wain or as *karlvagn* ("men's wain", Odin's or Thor's wain); apart from the stated Old Icelandic source, the records are, however, from a later period (cf. Scherer 1953, 140).

The Wain (the Great Bear of the south), the Hyades, and the Pleiades, thus were represented as constellation names with the Germanic peoples as well as Homer. The brightest star in the sky with the exception of the planets, Sirius in Canis Major ("greater dog") was associated with Loki, the fire-being and shapeshifter: *Loka brenna* ("Loki's fire") denotes Sirius in Icelandic; the appellation is, however, not yet verified in Old Norse (Reuter 1934, 280).

The names of other gods, too, are found in the sky. Highly poetic is the myth of the two eyes of the giant Thiassi (Thiazi), which Thor threw onto the sky (*Poetic Edda*, Songs of the Gods 7, Harbard's Song, verse 19). That Thiassi's eyes are identical with Castor and Pollux in Gemini (Reuter 1934, 282–283) may seem obvious, but is not literally stated in the texts (Zinner 1935, col. 695 calls the interpretation "arbitrary"). The catasterism of Thiassi's eyes was also attributed to Odin and not to Thor (*Prose Edda*, 2. Skáldsk. 56; Reuter 1934, 282). Out of the impressive constellation of Orion, which the Greeks (and we, too, along with them) always saw as a unit, many peoples picked out the

three prominent belt stars, giving them special names, with the predominant terms being beam, pole, stick, and spindle. In the Nordic tradition, "Frigg's distaff" denoted the three belt stars of Orion. The designation is, however, unverified in Old Norse; the name primarily appears in Swedish records (cf. Reuter 1934, 272–273).

A very different and remarkably independent area of the Germanic view of the sky was the connection of the Milky Way (*Via lactea*) with persons of contemporary history. This began in Belgium and northern France with names such as Huldenstraat, Vroneldenstraat, or Brunelstraat for the Milky Way, which denoted the Merovingian queen Brunhilda (Brunichild, Visigothic by birth, † 613; Boll/Gundel 1924–1937, col. 1026–1027; Reuter 1934, 283–284).

The Germanic connection to contemporary history reached a climax in the appellation "Iring's Way" for the Milky Way (Reuter 1934, 283–284; Künzl 2018, 119–120). The Thuringian defeat by the Franks and the demise of their kingdom in the early 6th century AD came about due to an inheritance dispute and Iring's betrayal (on Iring in general, see Weddige 1989). The main source is the Saxon aristocrat Widukind of Corvey († 973), writing long after the events themselves, with his three-volume Saxon chronicle composed in Latin. Widukind confirms that in his day, the Milky Way was still named after the Thuringian Iring (*Widukind*, *Rerum Gestarum Saxonicarum* I, c. XIII; Weddige 1989, 30, 63–69, 176).

During Widukind's time, i.e. in the 10th century, "Via lactea" had otherwise become the common name for the Milky Way; this was ensured by the illustrated codices with Aratus's/Germanicus's texts, which had by then become more widely distributed. There is no good manuscript of Iring's Song, and its contents have to be reconstructed from miscellaneous sources (on the personage of Iring in the various heroic epics, see Weddige 1989, 99–118). That Widukind heard the Milky Way still being called Iring's Way 400 years after the demise of the Thuringian kingdom provides a glimpse of how impressive the epic must have been. But the astronomical literature of the European Middle Ages was focussed on the editions of the ancient texts. Iring could not find entrance into these, and was therefore again forgotten. As a reflection of partly historical events and partly of a Migration Period heroic song, the appellation Iring's Way for the Milky Way remains a fascinating isolated phenomenon.

Apart from the hero Iring, Odin, Frigg, Thor, and Loki, as prominent exponents of the Germanic realm of the gods, are also represented as constellations (Bauer 1937, 47). Bears are, however, unfortunately again not to be found therein.

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Fig. 1. She-bear sculpture. Original: Greek work from the 3rd century BC, bronze, height 84 cm, Aachen, cathedral porch. Depicted is a copy. Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany (photo E. Künzl).



Fig. 2. The she-bear goddess Artio from Muri, Canton of Bern, Switzerland. Roman bronze figurine, late 2nd century AD, length of base 28.6 cm. Bernisches Historisches Museum, Bern, Switzerland (photo St. Rebsamen).



Fig. 3. The Great Bear (on top) on a Roman celestial globe with 48 constellations. Original: AD 150–220, brass, diameter 11 cm. Depicted is a galvanoplastic copy with dark line colouring. Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany (photo E. Künzl).



Fig. 4. The stars of Homer. From below in clockwise direction, coloured: Sirius in Canis Major (the Greater Dog), Orion, the Pleiades in Taurus (the Bull), Ursa Major (the Great Bear), and Boötes (the Ox-driver). Depiction on Roman celestial globe, AD 150–220, brass. Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany (drawing courtesy of RGZM, Mainz; colours by E. Künzl).

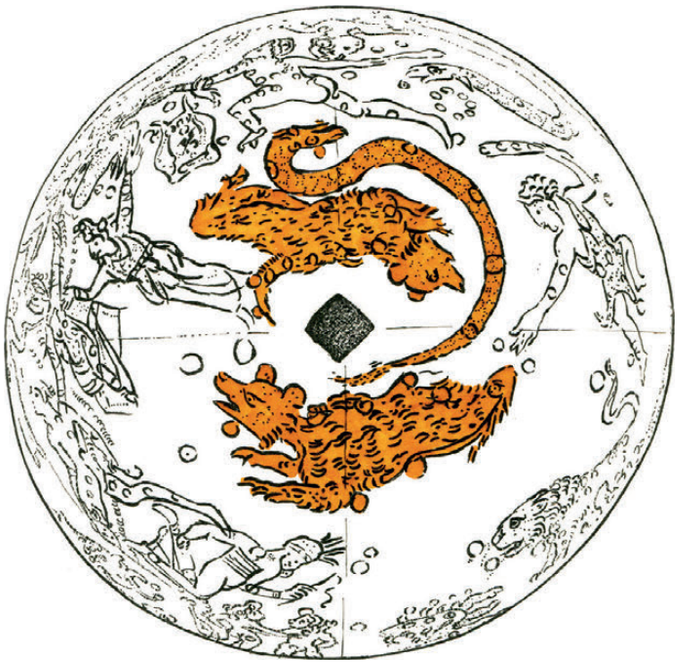


Fig. 5. Circumpolar constellations: the Great Bear (Ursa Major), the Little Bear (Ursa Minor), and Draco. Depiction on Roman celestial globe, AD 150–220, brass, diameter 11 cm. Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany (drawing courtesy of RGZM, Mainz; colours by E. Künzl).



Fig. 6. Circumpolar constellations (Ursa Major, Ursa Minor, Draco) on a star chart (planisphere) from the 15th century, following late antique source materials. Codex Vaticanus graecus 1087-310v. Vatican, Bibliotheca Apostolica Vaticana, Rome, Italy (after Boll 1903, plate 1 [detail]).

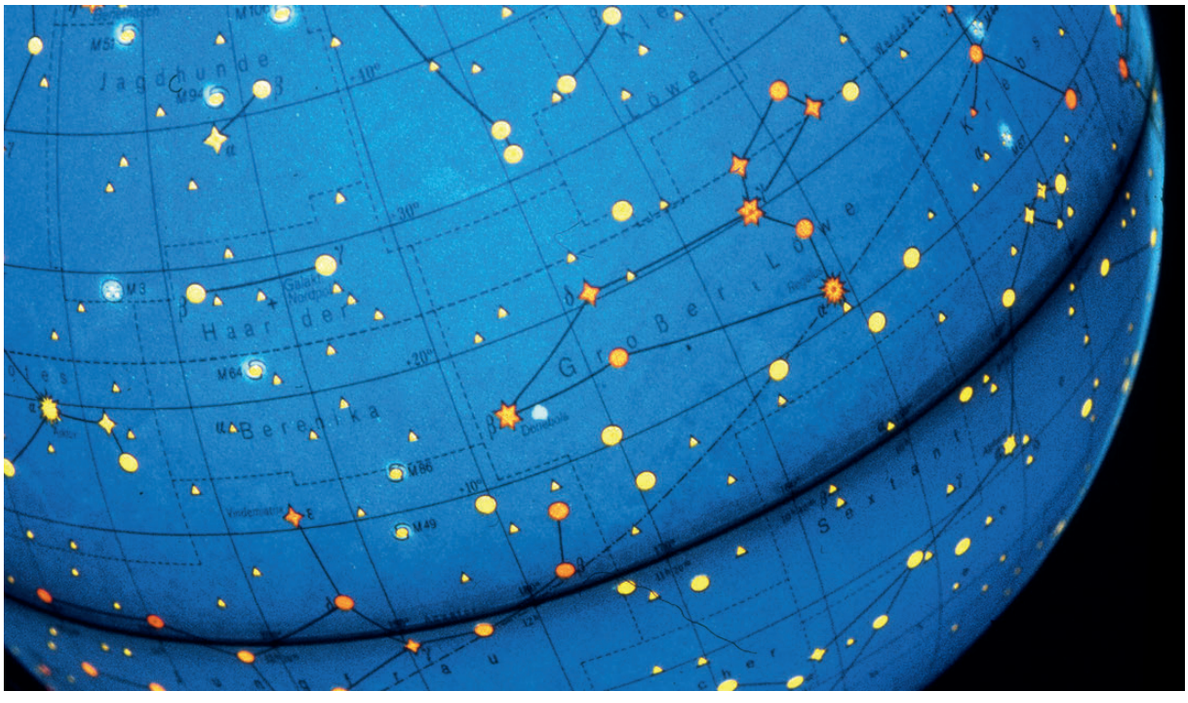


Fig. 7. Modern decorative celestial globe. Coma Berenices (Berenice's Hair) and Leo (Lion) are in the centre, Leo correctly faces to the right (photo E. Künzl).



Fig. 8. References to Arcadia. From below in clockwise direction, coloured: Ursa Major (the Great Bear), Ursa Minor (the Little Bear), Engonasin (the Kneeler; Hercules), and Arctophylax (the Bear-keeper; Boötes) were associated with Callisto, Cynosura, Arcas, and Ceteus of Arcadia. Depiction on Roman celestial globe, AD 150–220, brass, diameter 11 cm, Römisch-Germanisches Zentralmuseum (RGZM), Mainz, Germany (drawing courtesy of RGZM, colours by E. Künzl).